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ORIGINAL ARTICLES.

THE PRACTICAL VALUE OF LAVERAN'S DISCOVERIES.[1]

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EVEN in well-known affections advances are made from time to time that render necessary a revision of our accumulated knowledge, a readjustment of old positions, a removal even of the old landmarks. Perhaps the most remarkable illustration of this is offered by the discovery of the tubercle-bacillus. What a *volte face* for those of us who were teachers before 1881! Happy those who had agility and wit sufficient for the somersault! Scarcely less important has been the revolution in our knowledge of malaria since the researches of Laveran, in 1881, on the parasite of the disease. His discovery attracted for a time little attention, chiefly because the workers in pathology, the world over, had not opportunities for studying the disease. The verification of his work came slowly, while the conception of its far-reaching consequences has not yet filtered from the laboratories and clinics into the wide field of every-day practical medicine.

There are several aspects in which Laveran's studies may be considered as of immense value:

THE RELATION OF THE PROTOZOA TO THE ACUTE INFECTIONS.

A stimulus has been given to research that has already borne fruit in observations upon amebic dysentery, Texas cattle-fever, and certain skin-affections. The question of the protozoal origin of carcinoma has been revived, and prosecuted with an energy that must result in a valuable addition to our knowledge of the structure, and possibly, too, of the etiology of malignant growths. Although the life-history of the parasite is as yet imperfectly known, sufficient details are available to furnish one of the most interesting chapters in pathology, and at last we have revealed the meaning of that periodicity, so mysterious a feature in the malarial fevers, which has puzzled generations of physicians since Hippocrates. As a direct outcome of the study of the protozoal parasites of paludism may be mentioned the really brilliant discovery by Theobald Smith of the parasite of Texas fever, also a hematozoon, connected in its life-history with the cattle-tick (Boöphilus bovis). No more interesting problem in comparative pathology has been solved of late years, and the life-history of the parasite is better known than that of any other pathogenic protozoon.

THE DIAGNOSIS OF MALARIAL FEVER.

The best guarantee of a truth, as some one has said, is the wisest men's acceptance of it. There has been an extraordinary unanimity in the verification of Leveran's main facts by every competent worker who has had suitable opportunities for the study. The extensive and complete bibliography—the most complete yet published—in the monograph by my assistants, Drs. Thayer and Hewetson,[1] gives some idea of the widespread interest which the question has aroused. It is not too much to say that Laveran's work has revolutionized the study of fevers, as now a trained observer can determine whether any given case of fever depends upon a malarial infection. The parasites are present in all forms of the disease, and constitute a diagnostic criterion of unfailing accuracy in uncinchonized subjects. A certain technic and training are required, which a season in any malarial center can give, but which is not so easy to get in other localities. I shall refer shortly to the extraordinary abuse of the term malaria, which is used as a cloak to cover our ignorance of the nature of obscure fevers. A more extended knowledge of the fact that the malarial fevers are readily and quickly recognizable will give the physician pause in a hasty diagnosis, and will in time obviate one of the most glaring inaccuracies in the mortuary returns of certain towns.

But it is in the study of the fevers in the tropics that Laveran's discovery will prove of the greatest service, and as shown by the work of Vandyke Carter, in India, and Dock, in Galveston, the differentiation of malarial from other fevers is quickly made. It is most important that men who desire to study this problem should be equipped with the necessary technic. Several recent reports on malaria in the tropics have been sadly defective, and show that valuable opportunities have been wasted from lack of proper training on the part of the observer. Accurate information on the subject, in

[1] Read before the Medical Society of the District of Columbia.

[1] "The Malarial Fevers of Baltimore." Johns Hopkins Hospital Reports, 1895. Vol. v.

English, has not been until recently available. My article in the *British Medical Journal* (1887, I), remained for several years the only one which had a wide circulation, and the letters which I have received from practitioners in distant parts of the world indicate that, with the imperfect literature, there coexisted as a rule imperfect training and faulty apparatus. Now, however, the publication by the New Sydenham Society of Laveran's monograph, and of the works of Marchiafava and Bignami, of Mannaberg, and the monograph of Thayer and Hewetson, already referred to, gives access to all the available literature, and should prove a great stimulus to the study of tropical fevers from the new standpoint.

For so many generations the paroxysm of intermittent fever has stood for the type and representative of the class of fevers associated with chill that it has been, and still is, very difficult, particularly in this latitude, to avoid the suspicion of paludism in any disease associated with recurring rigors; and yet one may safely say that, in the cities of the Atlantic seaboard, the instances of chills and fever due to the malarial parasite are greatly exceeded by those of various other affections. The idea seems firmly ingrained in the mind, and I scarcely pass a week without seeing some instances in which the diagnosis of malaria has been made, simply because the patient has had recurrent chills. The error would not be so unfortunate were it not for the fact that it often causes delay in the adoption of suitable treatment, and may completely blind the physician to the true nature of the case. Perhaps the most frequent mistake is in the chills and fever of tuberculosis. As is well known, these occur at the two extremes of the disease. It is more particularly in the early stages that the mistake is serious, and I have on many occasions known a patient treated persistently for malarial fever without a suspicion having arisen that the trouble depended upon tuberculosis. In all varieties of septicemia the mistake is most frequent. Malaria postpartum, of which one hears not a little, is very often septicemia, and I rarely see a case of abscess of the liver that has not been drenched with quinin, in some instances for months, in the belief that it was a chronic malaria. Frequently pyelitis, pyelonephritis, gall-stones, and empyema are in the same way overlooked, and, even when the diagnosis has been demonstrated, I have often heard from physicians expressions which indicated a lingering idea that after all the septic trouble was only a consequence or a complication.

The profession at large has not yet laid to heart the following rules:

1. *That the diagnosis of the malarial fevers can be made with certainty by the blood-examination.*

2. *That an intermittent fever which resists quinin is not of malarial origin.*

A rich experience during the past nine years warrants the expression of these positive statements.

In the differentiation of the fevers of the South, about which so much discussion has taken place during the past ten years, the study of the changes in the blood must in the future play a most important rôle. The question of the existence of a third type of continued fever, which has been advocated by Guitéras, Baumgarten, and others, cannot be determined without a more complete study than has yet been given to the cases.

When one reads the report of the Proceedings of the Orleans Parish Medical Society, in which for many years the nature of the long-continued fevers of Louisiana has been discussed, the condition really seems to be similar to that in which the profession labored before the differentiation of typhus and typhoid fever. It is interesting to note that in New Orleans at least physicians seem to be coming gradually to the conviction that the long-continued fever which resists quinin is in reality typhoid, a view strongly advocated by Dr. Matas in a short paper in THE MEDICAL NEWS of December 15, 1894.

MALARIA AND VITAL STATISTICS.

The U. S. Census Report for 1890, recently issued, which covers the six years ending May 31, 1890, gives the following number of deaths from malaria, to which I add for comparison those of typhoid fever:

Washington—	Malarial fever,		500;	Typhoid fever,		850.
Baltimore—	"	"	934;	"	"	904
New York—	"	"	2060;	"	"	2031
Brooklyn—	"	"	1413;	"	"	1002

That in Baltimore, New York, and Brooklyn the deaths from malarial fever exceeded those from typhoid will, no doubt, be read with astonishment, particularly by those familiar with the conditions of practice in those cities. Any reasonable physician in Philadelphia or Baltimore will at once acknowledge that a death from malarial fever is a great rarity, while deaths from typhoid fever are only too common. Taking the reports of the large New York hospitals as a basis, one can estimate the degree of reliability of the figures on which the mortuary statistics are prepared. In the last-issued report of the Department of Public Charities and Correction of New York (1894) for the year 1891, the comparative rarity of malarial fever is well indicated by the fact that, of above 15,000 patients admitted to Bellevue Hospital during the year, there were only 15 instances of intermittent malarial fever. It is true that there were 76 cases of typhomalarial fever and only 16 of typhoid in the figures, which is surprising, considering the little stress that has been laid of late years upon typhomalarial fever; but when one turns to the list of deaths and finds that

all the cases of typhoid fever died, 16 in number, it looks as if the diagnosis rested a good deal upon whether the patient recovered or not. In the total number of deaths, 1547, malaria does not appear as accounting for a single one. So also at the Charity Hospital, of 619 deaths not one was caused by malaria.

At the Roosevelt Hospital in the year 1893 there were treated in the medical division 1436 cases, and, so far as one can gather from the report, there does not appear to have been a single case of malaria treated in the wards. Dr. Roosevelt, to whom I wrote on the subject, kindly informs me that from January 1, 1883, to December 31, 1893, inclusive, there have been but two deaths from malaria, both cases of the pernicious form. The total number of deaths in medical cases during this period was 2024, so that the proportion of deaths from malaria to all deaths from disease in the medical division of that hospital during the 11 years was about 1 to 1000.

In the New York Hospital, for 1893, of 1482 medical cases, there were in all 38 cases of malaria, with one death from pernicious fever.

Through the kindness of Dr. Browning I am able to give more extended figures for Brooklyn, a city in which the prevalence of malaria has engaged the attention of the profession for some years. The figures and tables sent to me were prepared by the direction of the Committee of Health, under the supervision of the secretary, Dr. G. S. West. Dr. Browning writes: "One peculiar general feature is that in the last 14 years, while the malaria cases have diminished pretty steadily down to less than one-half, the typhoid cases have fully doubled. During the same period the population has increased fully one-half, and by a small extent by increase in the city's area. Even then the typhoid cases have increased about twice as fast as the population."

He gives the figures for the ten years from 1884 to 1893, inclusive: deaths from typhoid fever, 1543; deaths from malarial fever, 1224. It will be noticed that there is a serious discrepancy between these figures and those in the Government Census for 1890, which deals with the six years ending May 31, 1890, during which time the deaths from malarial fever are stated to be 1413.

Carefully prepared tables of the deaths from typhoid fever, malarial diseases, and typhomalarial fever from 1880 to 1893 inclusive, have also been furnished. The totals for the 14 years are as follows: Typhoid fever, 1898; typhomalarial fever, 1104; and malarial diseases, 2006. In the Transactions and also in the Proceedings of the Medical Society of the County of Kings there are interesting discussions and reports on the prevalence of malaria. With reference to the occurrence of fatal malaria, it is worthy of note that in the reports on malarial fever on Long Island by Dr. Baker and by Dr. W. H. Thayer,[1] while it was acknowledged that intermittents occurred in many parts of Long Island, yet none of the physicians, whose correspondence is given in the papers, mentions, so far as I can gather, a single case of fatal malarial fever, nor do I see one mentioned in the discussion following the reading of the reports. In September, 1893, the members of the Society of the County of Kings again discussed at length the question of malaria in Brooklyn.[2] I have looked carefully through all of the papers there read, and it is certainly a very significant fact that not one of the authors of the papers, and not a physician who discussed the question raised, mentioned the occurrence of fatal forms of malarial fever. In the article by Dr. Hall on types of malaria seen in Brooklyn, in which he quotes the observations of a number of physicians, no mention is made by any of them of fatal forms, and this is a city credited in the bills of mortality with as many deaths from malaria as from typhoid fever! Certain of the writers of the papers seem to have themselves been a little suspicious; thus Dr. Hall remarks that "Carelessness of diagnosis probably affects our ideas of the prevalence of malaria to a considerable extent;" and Dr. Law, in the methods of treatment of malaria in Brooklyn, states that it seems to him a good practice in cases of the remittent type of the disease to give quinin in large doses for two or three days, and then, if the fever is not broken up, to stop and take bearings and search for some inflammatory lesions, or reconsider the possibility of typhoid.

The report from the Brooklyn Hospital gives the following: In 1890, of 608 medical cases admitted there were 18 cases of malaria and no deaths. In 1892, of 742 medical cases admitted there were 27 cases of malaria and one death. In 1893, of 683 medical cases admitted there were 20 cases of malaria and no deaths.

In the report from the Kings County Hospital for the year 1892 there were no deaths from malarial fever in a total of nearly 3000 patients treated with 310 deaths. In the report for the year ending July 31, 1893, there was one death from pernicious malarial fever in a total of 3258 patients treated, with 425 deaths.

In dealing with the statistics of malaria, Brooklyn may be taken as a model, and I have dealt with it partly because of the reputed large death-rate, and partly because the activity of the members of the Medical Society of the County of Kings has furnished most suggestive material, which has been supplemented by the kindness and energy of Dr. Browning.

[1] N. Y. Med. Journ., 1885.
[2] Brooklyn Med. Journ., Jan. 1893.

In localities frequented by the disease, malarial fever kills in such a way that the diagnosis is rarely in doubt. In the acute cases death follows within a few days. In other cases the hemorrhagic features prevail, while the malarial cachexia or the acute exacerbations in the malarial cachexia less frequently prove fatal. The simple intermittents rarely kill, even when protracted. Taking into consideration the statements of physicians in Brooklyn and Long Island, as given in the reports referred to, together with the striking absence of all reference to fatal forms, also the distinctive and readily recognized character of the fatal forms of malaria, one cannot help feeling that in these localities and elsewhere the diagnosis is put down carelessly, and does not represent in any way the incidence of malarial fevers. In the oft-quoted and oft-printed chart of the Michigan State Board of Health, showing the comparative mortality from typhoid fever in sewered and unsewered towns, Brooklyn figures almost at the bottom of the list, having a mortality of 1.5 per 10,000 inhabitants, a mortality which is much more than doubled if we add, as it seems should be done, the deaths due to typhomalarial fever and those due to malarial diseases.

The conclusion of the whole matter may be thus briefly expressed—the mortuary bills dealing with malaria are false, due either to ignorance or to wilful deception on the part of those who make the returns. Malaria is a disease that now rarely kills in the large towns on the Atlantic seaboard, and it behooves the profession to abandon the practice of making a careless diagnosis of the disease in every case of obscure fever which proves fatal, and the Medical Boards should refuse to receive a death-certificate signed malarial fever without more specific details than have heretofore been demanded.

SEVENTEEN CASES OF CHRONIC (RELAPSING) APPENDICITIS, TREATED BY OPERATION.[1]

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IT will be seen that 10 of the cases reported were females and 7 males. There were 16 private cases and one operated on in the amphitheater of the University College of Medicine; 15 cases were operated on in St. Luke's Home (my private hospital), and one was operated on in a private house; this last was the fatal case, and the only fatal case of operation for chronic appendicitis that I have had.[2]

The series of cases embraces operations performed in the interval between the attacks, when all or nearly all of the inflammatory symptoms had disappeared—the quiescent stage, as was originally suggested some years ago by Mr. Frederick Treves. There is not included any case of acute or other form of appendicitis.

From the report of my cases it may be seen that I am not always in a great hurry to operate, but that I am inclined to wait for the more acute symptoms to wear off, and operate, if at all, after suppuration has taken place, or during the quiescent stage, between the attacks.

There are some cases of appendicitis so slight that I am satisfied they belong to the general physician and not to the surgeon; very often they are not recognized as appendicular trouble, but are put down as bilious colic, localized petitonitis, kidney-colic, etc. Under rest, purgation, hot applications, rigid diet, leeches, and the very moderate use of opium these cases recover, and, in very many instances, stay well. In some of these cases, if, after the attack, one could look at the appendix and structures around it, he would see evidences of inflammation in the shape of slight thickening, induration, and adhesions. If one will examine subjects in any large dissecting-room he will find frequent specimens of this kind. These slight cases of appendicular trouble are not cases for operation. A man's usefulness is not impaired nor is his life usually shortened by it; indeed, he often gets on through life better than the man with a crippled leg, or the poor fellow who lives for years with a crippled heart. I wish my voice was strong enough, just here, to call a halt to the men who say: "Operate at once—not this afternoon or to-morrow, but now," in all cases when the disease is recognized.

There are cases, however, in which the disease, instead of abating, grows worse, the temperature gets higher, the pulse more rapid, the lump in the iliac region is larger, the belly is more tender, and possibly a rigor comes on. A slight pitting edema in the skin over the region of the appendix is sometimes seen. The fluctuation tells us that pus has formed, and the whole aspect of the case is changed. I know I subject myself to severe criticism when I say that even now I am not in all cases in a hurry to operate. Possibly the disease has been going on for some days, as is often the case, before the consulting surgeon is called; the symptoms are not so urgent, fluctuation not very distinct, and the barrier of lymph containing the pus is probably strong. I am not in a hurry to operate, because a certain proportion of these cases may get well without interference. Recovery is not always impossible, even after some matter is supposed to be present or is actually there. Years ago, when I knew less about the subject than I do now, I have punctured the abscess about the

[1] Read before the Medical Society of Virginia, September, 1895.

[2] I have operated on three other cases of chronic appendicitis, but the records of these cases are too imperfect to justify reporting them. These 3 cases recovered.

appendix with the needle of an aspirator and pumped out some of the pus, and afterward seen the man get well and stay well. One case was that of a Presbyterian preacher in Richmond, whose appendiceal abscess I aspirated several times. He is well and at work now. I do not pretend that this is good surgery, or that I would repeat it at this time; I introduce the fact now to show that recovery may take place after matter has formed. I have seen more than one instance of this, and I have even thought that the violent inflammation rendered the patient free from a second attack. This is certainly not impossible. If a large number of cases of appendicitis are examined it will be found that a large majority of these cases never have a second attack. It is true that delay in operating may end in the barrier being undone and purulent irruption into the peritoneal cavity ensue. I have never seen this occur after the third day. I have, however, seen matter burrow down toward the pelvis and bladder and upward toward the liver. Very often when one operates and opens this abscess he will find it attached to the parietal peritoneum; if so, the operation is simply opening an abscess. The opening should then be made large enough to introduce the finger and gently search for the appendix; and if one can find it or fecal concretions, they are to be removed. If the appendix is fastened by adhesions it should be let alone. The abscess-cavity should be drained with a rubber tube and gauze. If it is found that the abscess is not attached to the parietal peritoneum, I would treat the case, if practicable, as I describe in Case XI.

In acute perforating appendicitis I would operate at once. In such cases one cannot operate too soon. There may often be very violent infection and inflammation producing gangrene and sloughing of the appendix. The peritoneum is speedily involved, and diffuse septic peritonitis quickly comes on. Very often, in these cases, as soon as the peritoneum is opened there escapes a milky fluid thinner than pus, and it is always most imperfectly, if at all, confined by fibrin. These are the frightful cases, and an early operation alone gives a chance for life. It is these cases of acute perforating appendicitis that have induced many surgeons in this country to urge immediate operation in *every case* of appendicitis. I cannot subscribe to this doctrine. I have seen too many of the other kind of cases get well without an operation; but when we have a case in which the symptoms are ushered in with great rapidity, when the pain is atrocious, and the temperature high, the pulse rapid (from 110 to 120), when vomiting is persistent, and constipation insuperable, when the belly is tender, and the right iliac region hard, and, above all, when the patient's face indicates mortal illness; when he looks, indeed, like a man shot with a bullet through the belly; then one may know that perforation, with acute septic peritonitis, is imminent or has already taken place. Operation is then to be done at once, for delay is fatal. Remove the appendix, wash out the belly with warm normal salt-solution, wash it out over and over again, and then drain with strips of iodoform-gauze or tubes, or both. Good washing and free drainage give the only chance for life. These cases are what may be called fulminating appendicitis, or general septic peritoneal infection, and run their course quickly. The whole tale is told usually in 48 hours.

I have gone over, in a very brief and imperfect way, three forms of appendicitis, to distinguish them from the variety presented in the present paper. The cases reported are known as relapsing, or recurrent, or chronic appendicitis, the last name, to my mind, being the most appropriate.

An individual may have an attack of appendicitis more or less severe and the symptoms may gradually subside and disappear, and it is very possible he may never have a second attack; but if the first seizure is at all severe, it is likely that the appendix and parts around it are never entirely restored to their original condition, and at variable intervals of time the attack will recur, with greater or less violence. No one can foretell, from the history of the first attack, what the nature of the second attack will be, or when it will occur. I have seen three years intervene between the first and second seizures, and then a savage attack ensue. Dr. George W. Gay, of Boston, who has written a clever article on the subject, reports an interval in his own case of 17 years between the first and second attacks. But the pathologic changes caused by the first attack may disappear and a second seizure never come on, and a patient is entitled to that chance, if he so decides. But if the attacks are repeated, and especially if the intervals between them are becoming shorter, and the attacks more violent, then the appendix should be removed. The next attack may be fatal, or at least the man becomes a hopeless invalid.

Ever since Escherich discovered the microbe which he called the bacillus coli communis, it has been almost conclusively demonstrated that this bacillus is the genesis of a certain number of maladies, and the chief among them is appendicitis. This microorganism has its domicile in the digestive tract of man and animal, extending from the mouth to the anus. It was for a time regarded as not only inoffensive, but positively useful in the animal economy, but it has been discovered that, under certain circumstances, this microbe may become very virulent and hurtful. Any morbid condition of the bowels makes it virulent; inflammation, obstruction, strangulation, diarrhea, or constipation may render this bacillus virulent. Constipation is a common cause; indeed a very large proportion of

the cases of all kinds of appendicitis that I have seen were subjects of habitual constipation.

The bacillus coli is generally found in cases of appendicitis, alone, or sometimes associated with other pathogenic germs. The pathologic conditions, following one or more attacks of appendicitis, may be partially gathered from the report of my cases. The appendix may be fastened like a strap across the cecum, interfering with the peristalsis of the gut; it may be fixed by adhesions to other parts; it may be bent upon itself and its lumen occluded by kinking; a portion of the canal may be obliterated and closed at its cecal end, and the distal end distended to several times its natural size and filled with mucus or pus, or both; a small abscess may be found around the appendix, walled off strongly by a barrier of well-organized fibrin; or else, it is said, a foreign body may occupy its canal. I have never seen the last; I have seen soft fecal matter lying in the canal, and several times hard dry balls of fecal matter. In one case in Staunton, Va., in which I operated for acute appendicitis on a physician's son, the doctor opened the appendix before I completed the operation, and found what looked like two cherry-stones. Two little, round, smooth balls rattled in a dish as cherry-stones would be expected to do, and the mother stated, at the time, that her son had eaten pickled cherries a few days before. I afterward found, when I mashed the supposed seeds, that they were dry, hard fecal masses. In another patient, a young child, upon whom I operated for acute appendicitis for Dr. Moseley, of Richmond, a small, white, kidney-shaped substance, supposed to be a bean, was found in the discharge; this also proved to be fecal matter and fat. I know, of course, that foreign bodies are found in the appendix, but in the 36 cases of operation in my hands I have never seen one.

It is naturally asked, Is medical treatment in these cases of no avail? I confess, when I recall the pathologic conditions found in my cases, that medical means, to my mind, can be expected to help but little, if at all. In the present state of the science of medicine, one cannot expect them to overcome the difficulties that I have just now stated. But it may be urged that the cases may be only of moderate intensity, and the pathologic changes may be slight. Unfortunately we cannot always tell by the symptoms and duration of the attack how much mischief is done to the parts. An apparently slight and insignificant attack may leave the appendix and parts around it hopelessly crippled and diseased, while an apparently savage attack results in trifling mischief. I have operated after two or three comparatively slight attacks, and found the parts so matted and diseased as to tax all my skill, and only after hard work of an hour and a half completed the task; and I have operated when from severe and lasting symptoms I anticipated great trouble, and found but slight disease, and completed the operation in a few minutes. However, I am not opposed to medical measures. I confess, as I say, when I recall the state of the parts as I have seen them, I cannot feel hopeful of any treatment short of the knife. Prolonged rest in bed, rest not for days but for weeks, a restricted and regulated diet, purgatives, and counter-irritation with iodin and blisters, massage, and an intestinal antiseptic, as, *e. g.*, salol, constitute the chief remedies, and, through them, individuals who have had one attack have escaped a subsequent one. It is only fair to say that persons who have had one attack, and who have not received the foregoing remedies, but followed their usual course of life, have also escaped a second attack. I am frank to say, however, that I believe the former are more likely to escape than the latter.

The first case reported was not one of good surgery. The appendix should have been removed. That the patient got well, and has remained well for several years, is evidence rather of good luck than good surgery. These conditions, as is well known, are sometimes confounded. The case teaches, however, the value of ferrous sulphate in preventing reunion of separated parts, a fact that I have had repeatedly demonstrated to me before and since that time.

Cases V and VII show the hazard of leaving a raw surface, as the stump after castration in women, unprotected. It would be better to paint the raw surface over with the iron spoken of, touch it with a hot iron, or a hood of peritoneum from some neighboring tissue may be used.

Cases II, VI, VIII show the influence tubular and ovarian diseases may have upon the appendix.

Concerning Case XVII, I think it is not too much to say of this, my only fatal case, that he would probably have recovered if the operation had been done in a well-appointed modern hospital.

(To be concluded.)

UNINTERRUPTED ANESTHESIA IN OPERATIONS UPON THE FACE AND MOUTH.[1]

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ALL surgeons know the trouble, anxiety, and danger of operating upon the face and mouth on account of the necessity of removing the face-piece through which the anesthetic is administered so as to uncover the field of the operation and enable the operater to proceed; soon after the removal of the face-piece the patient recovers from the effects of the anesthetic and the operator has to stop to

[1] Read at the meeting of the Southern Surgical and Gynecological Association at Washington, D. C., on November 12, 1895.

allow the face-piece to be reapplied; and so on during the whole of the operation. All these drawbacks and delays become very much worse when the patient happens to be one of those unfortunates who respond badly to the effects of the anesthetic, or who often wake up quickly from a deep anesthesia and become almost unmanageable. It is a very sorry sight, that of an operation half completed, and an unruly patient bleeding freely and spurting blood all around by the wild movements of his head. His life is then at stake from the impossibility of completely controlling the hemorrhage all the while and of completing the operation in time.

It has been my ill-luck to have once encountered such a case, and the impression was such as to make me determine that henceforth I would control my patient by safe and uninterrupted anesthesia. Junker's inhaler is not equal to such emergencies, because, unless the bulb is pressed very gently, the liquid anesthetic is forced into the pharynx. I therefore devised an apparatus to that end, reducing the pain, the bleeding, the shock, and the duration of the operation to a minimum.

The apparatus was called the *Anesthetizer* or *Anesthetic Injector*, and its description was published in the *Journal of the American Medical Association.* Its feature was that neither the inlet-tube nor the outlet-tube dipped into the liquid, so that it was impossible for any liquid anesthetic to be injected into the patient's pharynx. But its drawback was that ether alone could not be used, because it was too freely diluted with air to have a thorough anesthetic effect. Besides, the mixture of air and chloroform was also rather diluted, and, should a particularly refractory case present itself, there was no positive means of increasing the strength of the dilution at will and as necessity required. These inconveniences have been overcome in the new, improved apparatus. It is an injector, truly, and not an inhaler as we understand it.

In this apparatus the inlet-tube dips into the liquid so that the air in passing out through the outlet-tube is much more charged with the vapors of the anesthetic. But here at once with this dipping of the inlet-tube came two difficulties: First, upon releasing the compression on the bulb, the liquid was aspirated into the bulb; and, second, the liquid anesthetic was thrown through the outlet-tube into the patient's pharynx. It required the utmost care and gentleness to avoid these accidents, and there were cases in which the full power of the apparatus had to be brought to bear to maintain the patient uninterruptedly anesthetized.

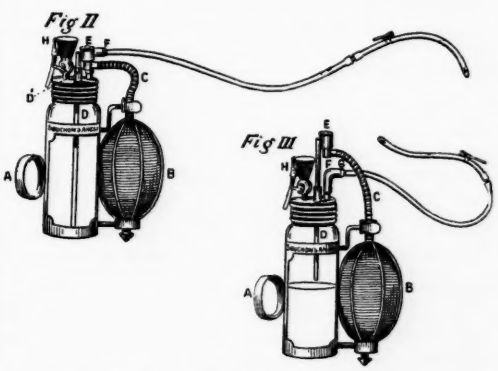
These difficulties, therefore, had to be conquered, and they have been by placing a proper valve on the course of the inlet-tube, and by maintaining a certain distance between the level of the liquid in the bottle and the point of exit of the fixed brass portion of the outlet-tube. That distance must not be more than one-half of the height of the receptacle. It took much experimenting and close observation before this was found out. Diaphragms, perforated tubes, etc., were used, but in vain, as they all failed when the liquid exceeded a certain amount. Now, a certain quantity is necessary, otherwise it would compel a too frequent replenishing. Of course, the size of the rubber bulb is an important factor; if too small, it would not inject a sufficient amount of the anesthetic; if too large, it produced such a splashing in the bottle as to require but a small amount of liquid; otherwise, if too much, the liquid would be injected into the pharynx.

The bulb is $7\frac{1}{2}$ in. in circumference at its middle. The size of the bottle is also to be considered; it is $6\frac{1}{4}$ in. in circumference or $1\frac{7}{8}$ in. in diameter. Therefore the size of the bottle and of the bulb, the amount of liquid in the bottle, together with the distance of the surface of the liquid from the brass and fixed orifice of the outlet-tube, are the correlative factors.

Description of Apparatus. The present improved apparatus is considered perfect in all particulars. It is

Fig I

SOUCHON'S IMPROVED ANESTHETIZER



composed of a glass cylindric receptacle, with a frame supporting a ring, A, for the thumb and a rubber bulb, B, so that it can be worked with one hand. From the

bulb originates a rubber tube, C, wrapped with coiled wire to prevent it from bending; it ends in the inlet-tube, D; just at the point of junction at E is a ball-valve which prevents the liquid from entering the bulb when the pressure upon the latter is released. The inlet-tube extends through the liquid anesthetic to the very bottom; its lower end is bevelled to prevent the orifice from being stopped by coming in contact with the bottom of the receptacle.

This inlet-tube slides up and down through another shorter tube, D^1, so that it can be drawn well up above the level of the liquid anesthetic, thereby diminishing the strength of the vapors injected through the outlet-tube into the pharynx. This feature makes the apparatus thus set an anesthetizer of the first model.

There is a circular line on the receptacle showing how much, and no more, liquid anesthetic should be poured in without running the risk of injecting liquid through the outlet-tube. This line corresponds to the middle of the receptacle from the bottom to the upper surface of the lid. This quantity will suffice to keep a patient anesthetized for nearly two hours with chloroform alone, one hour and a half with a mixture of equal parts of chloroform and ether, and about an hour with ether alone. The receptacle is closed by a metallic lid that screws around its neck; a washer makes it air-tight.

From this lid springs the metallic portion of the outlet-tube, F; it originates directly from the under surface of the lid; it is ½ in. in diameter inside and one and one-half inch in height; after a *very sharp* curve of 90°, it terminates by an orifice of not less than $\frac{3}{16}$ in. Repeated experiments have determined these dimensions; any decrease in them increases the chances of sputtering and of injecting liquid into the throat.

To this metallic portion is attached a rubber tube, 30 in. long, so that the anesthetist can hold himself well out of the way of the operator, leaving more room and play for those directly concerned in the operation. This tube should be sufficiently rigid not to bend too easily; its interior diameter should be $\frac{3}{16}$ in. Its last eight inches are formed by an ordinary rubber catheter, No. 13 English, connected to the main tube by a piece of glass or metallic tubing; this nasal segment can be changed to a smaller one when operating upon children. It is provided with a clasp, seven inches from the extremity; this clasps the nostrils and holds the tube in proper position. The receptacle is readily emptied through the outlet-tube after the operation is over.

The lid is provided with a funnel through which the anesthetic is poured into the receptacle, and through which it can also be emptied after being used. To the edge of the funnel is adapted a clasp, with a long arm that answers for a hook by which the apparatus can be suspended from a buttonhole; the clasp is to catch on to the cloth of the gown when there is no button-hole for the hook. Thus the anesthetist may have both hands free, resting or helping for a while.

Modus Operandi. When the apparatus is to be used it is first filled with the anesthetic up to the circular line; that represents 2½ ounces. The nasal end of the tube is smeared with vaselin. If desirable, an aseptic thin towel in a single thickness can be thrown over the apparatus without interfering with the proper working.

After the patient has been thoroughly anesthetized by any of the ordinary methods, the face-piece is removed, the tube is introduced through the nose until the clasp is reached, a distance of 7 in., and the clasp is made to grasp the nostril and fix the tube; the end of the tube is then in the *lower pharynx;* that is necessary because, if too high up, the patient, breathing through the mouth, would not inhale a sufficient amount of the anesthetic.

The anesthetist places himself to one side or other of the middle of the patient, so as to feel the radial pulse, observe the respiration, and be well out of the way of the operator and his assistants. By compressing the bulb the apparatus is set to work. It injects *only the vapor*, and no liquid anesthetic into the pharynx, *regardless of the force used on the bulb.* The bulb, however, should be compressed gradually, not jerkingly, specially if it causes coughing or recoil of the patient. By compressing the bulb more or less quickly and thoroughly the amount of anesthetic is graduated. As much as possible the compression should take place at the time of each inspiration. This rule compels a closer watch on the respiration.

It takes very little anesthetic to maintain anesthesia when a patient has already been well anesthetized. It is important not to keep on compressing the bulb, if the patient does not re quire it, or if the stage or procedure of the operation is not painful. Much harm is often produced by all methods by unnecessarily prolonged *deep* anesthesia, which harm is often passed under the name of shock, exhaustion, etc.

At times, when the patient expires, a resistance is felt upon pressing the bulb; of course, all force on the bulb should be suspended until it is felt that the resistance has yielded and the patient is about to inspire.

Anesthesia with Chloroform Alone. When chloroform alone is used the effects are at their best, quick, and thorough. Greater care should be exercised when chloroform is used alone. It is then that it would perhaps be prudent to draw the inlet-tube up above the level of the liquid; the dilution is then diminished.

Mixture of Chloroform and Ether. The mixture of equal parts of chloroform and ether is the one I prefer. It has the advantage of the quick and thorough effects of chloroform and the stimulating action of the ether.

Anesthesia with Ether Alone. The use of ether alone in the apparatus at first excites the throat if the patient has been chloroformed, but this soon passes off, and anesthesia is well maintained throughout the operation. Of course, those patients who yield with difficulty to the ordinary method of anesthetization will be more troublesome with ether. It requires more ether, more complete and frequent compressions of the bulb, and a closer observation of the inspirations than when chloroform alone is used. We should remember, however, that ether, especially if used alone, is contraindicated in operations about the face, head, and neck, because of the great congestion which it usually produces.

Proportions of Anesthetic Vapor and Air. Mr. Hermann Fleck, Ph.D., Instructor of Chemistry in the Harrison Chemical Laboratory of the University of Pennsylvania, was kind enough to determine the proportions of anesthetic vapors and air at each compression of the bulb. When the tube is above the level of the *chloroform* the expelled air contains 8.2 per cent. of vapor; when the tube extends through the chloroform, the expelled air contains 11.9 per cent. of vapor, or about one-third more. When the tube is above the level of the *ether* the expelled air contains 18 per cent. of vapor; when the tube extends through the ether

the expelled air contains 37.2 per cent., or double the quantity. It is noticeable that the expelled air is much more charged, about three times more, by passing through ether than when passing through chloroform, and only about twice when the tube does not extend into the anesthetic. In all cases, of course, the dilution after it passes from the outlet-tube and is inhaled is from 4 to 6 times weaker.

Sundry Remarks. The amount of anesthetic consumed is very small, about 1 ounce of chloroform per hour, but 2½ ounces of ether for the same length of time. There is no external evaporation, and this will be greatly appreciated by the operator and his assistants.

The apparatus works very well also when the head is lowered, as in the Rose position.

Should the operation involve the two nasal cavities at the same time when the tube might be in the way, the tube could be introduced through the mouth into the lower pharynx, care being taken to prevent the tube being bitten by using a wedge or gag, or by connecting the end with a metallic tube, or, best, with a disinfected male metallic catheter, which the teeth could not crush.

The end of the flexible tube may be connected with the apex of the face-piece or cone placed over the mouth and nose and the vapor of the anesthetic forced into it. But the face-piece must fit tightly and exclude the air, because the air from the bulb has already diluted the chloroform. For that reason, ether used thus very seldom produces anesthesia.

Anesthesia may be produced from the outset without previously using a face-piece by introducing the tube at once through the nose into the lower pharynx. This does away with all possible nasal reflexes, the effects of which have been so graphically demonstrated by Professor Laborde, the successor of Claude Bernard and Paul Bert at the College de France, in Paris.

The lower end of the bulb is so arranged as to allow it to be connected with a piece of tubing leading to a bag of oxygen, if desired.

For obvious reasons it is important that all connections should be air-tight.

Care should be taken that no bends or kinks form in any part of the tubes, or this will interfere with the proper working of the apparatus.

Sometimes the little ball-valve in the tube becomes adherent to the margin of the orifice inside and the bulb does not empty; by striking on the tube at that point the valve becomes loose again.

The bulb is detachable and may be removed whenever this becomes necessary, that is, when it loses its firmness and elasticity, and when the valves get out of order. This is determined by pressing tightly the tube of the bulb and compressing the bulb; if the air is then expelled it is because the valves are out of order. The manufacturer can supply a new bulb by mail.

Every part of the apparatus can be taken apart to be thoroughly cleaned and sterilized.

The apparatus is most useful also in operations about the head and neck, allowing the operator and his assistants more room, and sparing to all around the unpleasant odor of the anesthetic.

The device has been used in the Charity Hospital of New Orleans by about all the surgeons, Drs. Matas, Delaup, Martin, Bloch, etc., also by Dr. De Roaldes in the Sanitarium. I have used it for Dr. Lange, in New York, in the presence of Drs. Halsted and Fenger, and in the Jefferson Clinic, in Philadelphia, for Drs. Keen and Hearn, in the presence of Drs. Da Costa and Barton. All these surgeons expressed themselves well pleased with the results.

No ill effects have ever resulted from the direct contact of the vapors of the anesthetic with the mucous membrane of the pharynx or larynx.

Conclusions. This apparatus is the *only one* with which there is *no risk of injecting liquid anesthetic in the pharynx regardless of the force applied to the bulb.* Its safety, simplicity, compactness, portability, efficiency, and easy management speak for themselves.

Its use results in a great saving of time, pain, bleeding, and shock to the patient, thereby contributing materially to the saving of life in operations which for the most part are long and bloody, and often bring the patient to death's door. It also provides a great saving of mental strain to the surgeon, who can proceed rapidly and uninterruptedly with the operation.

REPORT OF 111 ADDITIONAL CASES OPERATED UPON WITH THE ANASTOMOSIS-BUTTON.

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(Concluded from page 538.)

BACON'S OPERATION. This operation was described by Dr. J. B. Bacon,[1] and has been performed twice. The first operation was performed by Dr. Bacon July 8, 1893, for a specific stricture of the rectum. Two years and three months have now elapsed, and there is not only no return of the stricture, but the caliber of the rectum has enlarged since the operation, the infiltration has disappeared, and the rectal walls are now soft and pliable; it is

[1] Medical Record, Dec. 10, 1892.

GASTROENTEROSTOMY. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position.	Result.	Cause of death.	Size of button.	REMARKS.
28	1894. Apr. 23	Canada Lancet, Sept., 1894	Meek, H., London, Ont.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	No. 4.	Button not found Postmortem, 11 months later: Opening over 1 in. in diam.; no contraction; no adhesions. Button not found.
29	July	Col. Climat., Mar., 1894.	Wooding, B. F., Trinidad, Col.	Carcinoma of pylorus and duodenum.	Gastroenterostomy.	S. S.	D.	Shock.	.....	Patient in extreme condition; never rallied from shock.
30	Oct. 13	Col. Climat., Mar., 1895.	Parkhill, C., Denver, Col.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Shock.	No. 4.	Anastomosis quickly made between posterior wall of stomach and ileum; patient very weak; died shortly after operation.
31	Oct. 20 1895	Med. Sentinel, Mar., 1895.	Fulton, J. S., Astoria, Ore.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	No. 4.	Patient died suddenly on 16th day from marasmus; postmortem: no peritonitis; union perfect; button found free in descending colon.
32	June 7 1894	Reprint from Ann. de la Assoc. Med. Chir.	Lenger, Liege, France.	Carcinoma of pylorus.	Gastrojejunostomy.	S. S.	R.	.....	.....	Button passed 18 days after operation; good recovery.
33	. .....	Med. Sentinel, May, 1895.	Smith, A.C., Portland, Ore.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion.	.....	Patient died from exhaustion forty-eight hours after operation. Postmortem: Perfect adhesion of approximate parts.
34	Nov. 20	Lancet, Lond., May 4, 1894.	Lane, J. E, London, Eng.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	No. 4.	Button not found; patient gained 46½ pounds in weight in 6 months after operation.
35	Aug. 1	Not published.	Silver, H. M., New York.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion 8th day.	.....	Necropsy: Button still in position; method of its pressure-atrophy well illustrated.
36	.....	" "	Kurtz, Carl, Los Angeles, Cal	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion 24 hours.	.....	Button well in place.
37	.....	" "	Vander Veer, A., Albany, N. Y.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion 3d day.	No. 3.	Advised not to be operated on, on account of extreme condition; comfortable after operation. Postmortem: Button found in excellent position; union quite pronounced; all surroundings favorable.
38	1895	Belgian Surgical Society.	Rouchet, P., Antwerp, Belg.	Tumor of pylorus.	Gastroenterostomy.	S. S.	R.	.....	....	Dr. Rouchet recommends using 2 buttons; 1 joining end of jejunum to posterior wall of stomach, and the other joining end of duodenum to side of jejunum.
39	Jan. 25	Lancet (London), May 18, 1895.	Allingham, Herbert W., London, Eng.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion 4th day.	.....	Necropsy: Stomach enormously dilated; Murphy's button in no way blocked; perfect union; no leakage; no peritonitis.
40	Jan.	Not published.	Dunne, James H., Minneapolis, Minn.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.....	Button voided 14th day. Died 3 months later. Necropsy; Extensive carcinoma of pylorus; opening between stomach and intestine larger than button used; soft union; no cicatricial tissue. Such a union could not contract.
41	June 26	" "	Davis, J. A., Ch'cago, Ill.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion 24 hours.	.....	Button in perfect position; no peritonitis; patient in extreme exhaustion before operation.
42	June 5 1893	" "	Stewart, R. W., Pittsburg, Pa.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	No 4.	Button voided 13th day; patient discharged from hospital in 3 weeks.
43	July 25 1895	Centlbl. f. Chir., No. 37, 1894.	Zielewicz.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Perforative peritonitis.	.....	All went well until 7th day; then sudden abdominal pain, collapse, death; button found in abdomen; gastric perforation as if cut; patient had eaten ½ pound of sausage that day.
44	Jan. 25	Practitioner, June, 1895.	Treves, F., London, Eng.	Malig. tumor of pylorus.	Gastrojejunostomy.	S. S.	D.	Exhaustion.	.....	Patient very low before operation; did not rally.
45	Apr. 19	Practitioner, June, 1895.	Treves, F., London, Eng.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.....	Recovery uneventful; the operation was of the simplest character.
46	1894 Feb. 20	Bull. de la Soc. de Chirurg., 1894, p. 838.	Terrier.	Obstruction of pylorus.	Gastroenterostomy	S. S.	D.	Cachexia.	.....	Patient in very low condition; died 4th day; no peritonitis; perfect union.
47	July	Ann. Surg., xx, 70.	Van Arsdale, W. W.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Inanition.	.....	Button found in stomach; death on 10th day, possibly due to constriction of intestine by mesocolon; union perfect.
48	Nov. 11	Gaz. Hebd., Mar. 30, 1895.	Villard and Jabouley.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion.	.....	Woman aged 77 years; very feeble; died 3d day; no peritonitis.
49	Sept. 26	Gaz. Hebd., Mar. 30, 1895.	Villard.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.....	Button not found; recovery uneventful; condition good Feb. 1895.
50	Jan. 4	Gaz. Hebd., Mar. 30, 1895.	Poncet.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	.....	.....	Death on 2d day, attributed to bad general condition of patient.
51	?	Rev. de Chir., Feb. 10, rep. in Soc. de Chir., Dec. 1894.	Quenu.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Peritonitis.	.....	Death on 2d day; button found imperfectly closed.
52	1895	Revue de Chir., Sept. 1895.	Chaput.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.. ...	Had to resect thickened wall of stomach.
53	1894 Sept. 29	Beitr. z. klin. Chir., 1895, xiv, 1.	R. v. Frey.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.....	Button passed 18th day; patient discharged 25th day.
54	1895 June 5	Med. and Surg. Rep., Oct. 5, 1895.	Stewart, R. W., Pittsb'g.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	R.	.....	.....	Button passed 13th day; died July 20, 1895. (Duplicate.)
55	.....	Bull de la Soc. de Chir., 1894, p. 652.	Demons.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Peritonitis.	.....	Death in 8 days; carcinoma involving whole stomach; purulent peritonitis.
56	.....	Bull. de la Soc. de Chir., 1894, p. 652.	Demons.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Peritonitis.	.....	No autopsy.
57	Jan. 16	Hygiea, Mar., 1895.	Borelius, Sweden.	Pyloric disease.	Gastroenterostomy.	S. S.	R.	.....	.....	Button not passed 6 months later.
58	.....	Hosp. Tidende, July 24, 1895.	Tschirning, Sweden.	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Exhaustion.	.....	Autopsy showed button in stomach; union perfect.
59	.....	Hosp. Tidende, July 24, 1895.	Malthe, Norway	Carcinoma of pylorus.	Gastroenterostomy.	S. S.	D.	Inanition 3d day.	.....	Button served its purpose.
60	Feb. 21	La France Méd., April 19 1895.	Monod, Charles.	Gastric carcinoma.	Gastroenterostomy.	S. S.	R.	.....	.....	Button not found; recovery uneventful.
61	.....	Hosp. Tidende, July 24, '95.	Malthe, Norway.	Carcinoma of pylorus.	Pylorectomy.	E. S.	R.	.....	.....	Uneventful convalescence.
62	.....	Hosp. Tidende, " "	Malthe, Norway.	Carcinoma of pylorus.	Pylorectomy.	E. S.	R.	.....	.....	Uneventful convalescence.
63	.....	Hosp. Tidende, " "	Malthe, Norway.	Carcinoma of pylorus.	Pylorectomy.	E. S.	D.	Peritonitis.	.....	Malthe omitted suture on posterior side; had fistula form, and patient died 3 weeks later.
64	July 19 1894	Rev. de Chir., Oct. 1895.	Quenu, Paris, France.	Carcinoma of pylorus.	Gastrojejunostomy.	S. S.	R.	.....	.....	Recovery good; button passed July 22d. Impossible to extirpate neoplasm.

CHOLECYSTDUODENOSTOMY FOR CHOLELITHIASIS. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
39	Nov. 4 1894	Col. Climat., Mar., 1895.	Parkhill, C., Denver, Col.	Cholelithiasis with cholecystitis.	Cholecystduodenostomy.	S. S.	D.	Peritonitis.	Contents of septic gall-bladder escaped into peritoneum during operation; button No. 4 used. "Death in 4 days from peritonitis," probably produced by bacillus coli communis which escaped from gall-bladder.
40	Oct. 17 1895	Lancet, London, March 23, 1895.	Swain, Paul, Plymouth, Eng.	Cyst of gall-bladder.	Cholecystduodenostomy.	S. S.	R.	.....	Button not found. Patient had some elevation of temperature after operation. December, patient in good condition.
41	March	Not published.	Roskey, A. E., Portland, Or.	Occlusion of common duct.	Cholecystduodenostomy.	S. S.	R.	.....	Gall-bladder contained about 1 pint of fluid; button passed on 11th day. Cause of obstruction could not be determined. Six months after patient had gained much in weight; "fat, hale, and hearty."
42	March	Medical Sentinel, May, 1895.	Smith, A. C., Portland, Or.	Colelithiasis.	Cholecystduodenostomy.	S. S.	R.	.....	Calculus was impacted in cystic duct; button passed 15th day; patient discharged 20th day.
43	Sept. 17	Not published.	Silver, H. M., New York.	Colelithiasis, obstruction of common duct.	Cholecystduodenostomy.	S. S.	R.	....	Button not passed up to 35th day, unless it escaped observation.
44	Apr. 10	" "	Vander Veer, A., Albany, N. Y.	Obstruction of common duct.	Cholecystduodenostomy.	S. S.	R.	.....	One large gall-stone; button passed 12th day; jaundice disappeared. Present condition (July 24, 1895), good health.
45	Feb. 5	" "	Ohage, Justus, St. Paul, Minn.	Cholelithiasis.	Cholecystduodenostomy.	S. S.	R.	.....	Button not found up to April 3, 1895. Patient in excellent condition.
46	Mar. 3	" "	Ohage, Justus, St. Paul, Minn.	Cholelithiasis.	Cholecystduodenostomy.	S. S.	R.	....	Button not found up to April 3, 1895. Patient in excellent condition.
47	.....	" "	Dunn, J. H., Minneapolis, Minn.	Cholelithiasis.	Cholecystduodenostomy.	S. S.	R.	.....	
48	Sept. 21	" "	Bryan, C. H., Chicago, Ill.	Calculus, common duct.	Cholecystduodenostomy.	S. S.	R.	.....	Jaundice disappeared 3 weeks after operation; patient up and feeling well; stone found impacted low down in common duct; could not be displaced.
49	.....	Hosp. Tidende, B. 4, Bd. ii, p. 746, 1894.	Munter, H.	Cholelithiasis (infected).	Cholecystduodenostomy.	S. S.	R.	.....	Button voided 23d day.
50	Oct. 22 1895	Not published.	Owens, Edm'd B., Dixon, Ill.	Cholelithiasis.	Cholecystduodenostomy.	S. S.	R.	.....	Three-hundred gall-stones removed. Uneventful recovery.
51	July 4 1894	Wis. State Med. Soc.	Ladd, George D., Milwaukee.	Cholelithiasis.	Cholecystduodenostomy.	S. S.	R.	.....	Patient had pain after operation; celiotomy to ascertain cause. Found perfect union; no button found in ileo-cecal valve. Calculi all removed at time of operation.

CHOLECYSTOSTOMY WITH LONG DRAINAGE BUTTON.

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
3	Nov. 13 1894	Not published.	Vander Veer, A., Albany, N. Y.	Cholelithiasis.	Cholecystsotomy.	.....	R.	.....	Long button made use of; operation exceedingly simple. Button came away on 11th day; wound healed in 3 weeks.

CHOLECYSTDUODENOSTOMY FOR MALIGNANT DISEASE. (METHOD: MURPHY BUTTON.)

No.	Date.	Publication.	Operator.	Diagnosis.	Operation.	Position	Result.	Cause of death.	REMARKS.
9	1895 Feb. 3	Col. Climat., Mar., 1895.	Cochems, F. W., Salida, Col.	Sarcoma, cystic duct.	Cholecystenterostomy.	S. S.	R.	.....	Death 3 weeks later from exhaustion.
10	 1893	Amer. Med.-Surg. Bulletin.	Schachner, Aug., Louisville, Ky.	Malignant obstruction.	Cholecystenterostomy.	S. S.	D.	Death, 36 hrs.	Operation complicated by tear in intestinal wall, outside of button, which was sutured; liver enlarged and hard.
11	Feb. 19	Pacific Med. Journ., June, 1893.	Rosenstein, Julius, San Francisco, Cal.	Common duct obstruction.	Cholecystenterostomy.	.....	D.	Death, 15 days	Post-mortem: Carcinoma of liver; circumscribed abscess around seat of approximation; no union; no peritonitis. It will be noted that the abscess was circumscribed, but it is not clear whether the infection was primary, and prevented adhesions, or secondary, the result of failure of union. As there was no adhesion at seat of approximation, it is fair to presume the infection was primary, otherwise there would be union in some places.
12	1894 Dec. 3	Ann. Surg., xxi, 581.	Shepard, F. J.	Carcinoma of Pancreas.	Cholecystcolostomy.	.....	D.	Hemorrhage 4th day.	Friable wall of gall-bladder cut through by button.

the best result I have ever observed following an operation for stricture of the rectum. Case 148, in this report, was operated upon for a similar condition, with equally gratifying results. The infiltration has almost entirely disappeared, and only four months have elapsed since the operation.

The third case, resection of annular carcinoma of the rectum, also occurred in my practice, and, at the present time, thirteen months after the operation, there are no indications of its return. The fourth case, by von Baracz, of Lemberg, has not been reported in full.

FIG. 1.

Gall-bladder retention-forceps.

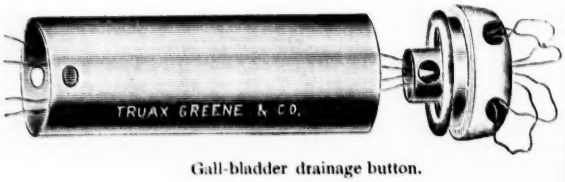
RESECTION OF THE RECTUM. This operation has been performed but a very few times by this method, and the number of cases does not warrant us in

FIG. 2.

Murphy button.

making general deductions. The first Kraske operation by this method was performed by Dr. Henry O. Marcy, of Boston, October 16, 1893. The patient

FIG. 3.

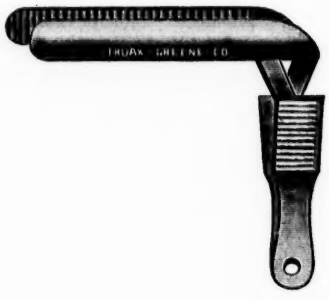


Gall-bladder drainage button.

died about one year later from recurrence of the carcinoma. Another case occurred in my own practice, and was one of annular nonmalignant stricture; the operation was performed January 16, 1894; there has been no recurrence of the stricture up to the present time, two years and nine months after the operation.

The objections that have been urged against the button are, first, that the size of the opening made is too small, and that stenosis will follow. Experience shows that contraction does not take place in the cicatrix produced by this method of approximation, when the viscus is in full function. The

FIG. 5.



comparative absence of contraction by the button-anastomosis is well illustrated by von Frey (*Beitr. zur klin. Chirurg.*, 1895, xiv). I am convinced that it will not be necessary to employ button No. 4 except in the large intestine, No. 3 being amply large for all small-intestine approximations, and the oblong button may be used in gastro-

FIG. 4.

enterostomy if a larger opening be desired. The second objection is that the button will produce obstruction, as it is a foreign body in the intes-

tinal canal. Experience has so far supported my original claim that it will not produce obstruction, except when there already exists a pathologic diminution of the intestinal caliber. There is one case reported in which the button produced intestinal obstruction and perforation. The doctor reported as follows: The patient had repeated attacks simulating intestinal obstruction, and I feel sure that, should I have another case similar to this, I could easily extract the button and prevent the fatal termination. It has not diminished my enthusiasm for this ideal device in the least. The ease and certainty with which it can be applied discounts all its possible dangers. I have heard of another case, still unreported, of which I lack sufficient details for comment, but it was mentioned as a case of obstruction from the button.

FIG 6.

It is a source of great satisfaction to me to find from this large experience—278 cases—that this accident is likely to be a rare one, since, from a purely theoretic point of view, in the beginning of the use of the button it caused me some misgivings.

The third objection is that the caliber of the button will become occluded. There have been three cases reported in which this accident occurred. The occlusion of the opening of the button should not occur if the precaution is taken to keep the contents of the bowels fluid by mild catharsis—a practice I have always followed.

In experiments on the dog, I find that unless care and judgment are exercised the mesenteric vessels that supply a larger portion of the intestine than it is intended to resect are liable to be ligated. In that case gangrene of the intestinal extremities, instead of adhesion and union, will probably be the result.

The most frequent cause of nonunion and of fistulæ following operations for intestinal anastomosis is infection at the time of the operation.

I would respectfully request the members of the profession to kindly send me reports of their experiences with the anastomosis-button, with sufficient details to permit of their being used in the tabulation.

3152 MICHIGAN AVE.

CLINICAL LECTURE.

A CASE OF PERNICIOUS ANEMIA DUE TO ILEO-COLIC DISEASE.[1]

BY WILLIAM PEPPER, M.D.,
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GENTLEMEN: I have the honor to present to you for study to-day a case of chronic disease, the symptoms of which have been to us a subject of keenest interest and a cause of deep anxiety. The patient is a man of fifty-four years, a farmer, whose father died at the age of fifty years of typhoid fever; his mother died at the age of eighty years of causes unknown. He has four brothers living, three in good health, the fourth being troubled, he says, with rheumatism and edema. One brother died of pulmonary tuberculosis, and one sister died of some tumor of the stomach, probably a carcinoma. Our patient had all the ordinary diseases of childhood, since when he has never been confined to his bed and has enjoyed exceptionally good health. Eight years ago he had a slight attack of rheumatism in his shoulder, which, however, never prevented him from doing his work. Eleven months ago he noticed that the slightest exertion made him weak and provoked shortness of breath and palpitation of the heart. He could not walk for any distance without stopping to rest. At the time this occurred the patient was living just the same as theretofore, had the same duties, ate the some food, had no especial care or worry. This condition persisted during the winter. Four months ago his feet began to swell at night, particularly after he had been on his feet a great deal. He was never a hearty eater, but he ate rapidly and did not properly masticate and insalivate his food. In December of last year, before the swelling of the feet appeared, he lost his appetite, his breathing became heavy, and in the morning he would raise dark-brown coffee-colored mucus, and at times he would also expectorate dark matter during the night. For a long while he had had some symptoms of dyspepsia, with occasional attacks of diarrhea, which, however, were probably only the result of his bad habits of eating. For some years he has had to urinate occasionally during the night, but during the last two years he has complained of frequent nocturnal urination. His bowels have always been regular, except for occasional looseness.

From the foregoing symptoms various diseases may be suggested to you. When we heard that carcinoma

[1] Delivered in the Hospital of the University, October, 1895.

was in the family, in connection with his age, loss of flesh, cachectic color, and the raising in the morning of dark mucus like coffee-grounds, we feared he might have carcinoma of the stomach and we examined the stomach and its contents to determine whether there was any neoplasm there. As you see, the color of his abdomen is intensely anemic. The stomach is moderately dilated, the lower margin reaching to 1½ in. below the navel and will contain 2½ pints, but not with the most extreme care could any tumor or hardening or thickening be found anywhere in the gastric area. We washed out his stomach with 7½ pints of distilled water and afterward gave him a test-meal, an hour and a half after which the contents of the stomach were expressed for purposes of analysis. The last portion of the lavage came off clear, in fact all was fairly clear, there being only a slight amount of mucus. The gastric contents were tested for free hydrochloric acid and none was found. The tests also showed some reduction of the digestive juices and impairment of the motor power of the stomach-wall. There is no proof, however, that the pylorus is obstructed. The bowels have been rather loose, and vomiting has been absent. I have told you that free hydrochloric acid was absent and we are trying to learn what that sign means. You will remember that earlier observers considered the absence of free hydrochloric acid after a test-meal, coupled with cachexia and loss of flesh, as almost pathognomonic of gastric carcinoma. Further observations, however, have revealed the fact that free hydrochloric acid is absent under other conditions, such as profound anemia and in atrophy of the glands of the stomach connected with no trace of any malignant disease. A continued persistent absence of free hydrochloric acid is, however, as a sign of carcinoma, of some diagnostic value; but the mere absence of acid without the concomitant symptoms cannot be depended upon to establish the diagnosis.

Here is a man of the requisite age, raising coffee-grounds material, losing flesh, growing weak and progressively cachectic, and with no free hydrochloric acid; but the direct exploration of the stomach fails to show thickening or tumor; nor is there any pyloric obstruction so far as I can judge; no dilatation of marked degree, no visible reversed wave of peristalsis, no vomiting of retained fermenting matters. I do not say that you will always find, when there is malignant disease of the stomach, pain, vomiting from mechanic obstruction, gastrectasis, increasing constipation, or even tumor. There may be a carcinoma, not large, in the posterior wall of the stomach, centrally situated, a mural growth; in such a case food can to a certain extent undergo the process of digestion, be propelled past the pylorus, and in connection with such a lesion the only symptoms may be emaciation, cachexia, and failure of digestive power. Although we must always bear in mind the possibility of such a condition, nevertheless, in the absence of positive diagnostic points, we are not justified in allowing our anxiety and fear to run away with us and lead us to believe that carcinoma exists. On the contrary, we should fight until the last moment against the admission of that fatal diagnosis. We see too much of this yielding to anxiety. This is a diagnosis we should not be forced to make until we can demonstrate it; always give the patient the benefit of the doubt. The moment a doctor would tell me that I had carcinoma, while there were still the shadow of a doubt, unless he could demonstrate it, I would have no further use for that physician. Such a diagnosis paralyzes all one's efforts. You cannot try earnestly to relieve a patient whom you think has carcinoma; all you can attempt to do is to make his last moments painless.

This man also had edema of the feet, increasing pallor of the surface, and frequency of urination, which has been imperative during the night, calling him up often. He was a farmer, accustomed to rising early and exposing himself to all sorts of weather. With such men nephritis is a common affection. Upon examination of the urine, however, we found it normal; 1018, acid, no albumin, no sugar, and no casts. The edema was not the ordinary edema of nephritis, with puffiness about the eyelids; it was more the edema of a weak heart or of poor blood, coming on at night, particularly after extra exertion during the day. There is, however, no sign of organic disease of the heart to explain this.

If this man has no organic disease of the stomach, liver, kidneys, heart, or lungs to explain these signs, where are we to look for the causes of this progressive weakness and malassimilation? The blood at once suggests itself, and we turn with the greatest interest to this examination. A careful examination has given the following results: Red corpuscles, 1,250,000 in the c.mm.—to 25 per cent. of the normal; hemoglobin 20 per cent.—a reduction of 80 per cent., but corresponding closely to the reduction in the red globules; leukocytes 9000. I beg you in particular to note the corresponding reduction of red cells and hemoglobin in this case, and contrast that with the disproportionate oligochromemia seen in chlorosis. The blood showed a high grade of poikilocytosis—ill-formed and poorly shaped red corpuscles. There were also microcytes, minute globules much smaller than the normal red cells and often more intensely colored. Besides these there were large cells, macrocytes; furthermore, nucleated red cells. Here, then, is a blood that presents an oligocythemia and a corresponding oligochromemia, with dwarfed cells, giant cells, misshapen cells, and nucleated cells. Here is evidence that the whole hemic function is profoundly disturbed. The charts you here see illustrate the conditions I have mentioned.

Such a hemic condition corresponds to the condition of the blood in the disease known as progressive pernicious anemia, a disease that has been studied very closely for the past 20 years, but the real origin and causation of which are still obscure.

When progressive pernicious anemia was first recognized, it was regarded as an absolutely fatal disease, coming without cause, like leukemia and carcinoma, and the other great cachexiæ, and running its course to an invariably fatal result. But we have since learned that while there are some cases of pernicious anemia that run the course I have just stated, there are other cases clinically indistinguishable from them that yield to certain forms of treatment. For this reason, while the disease holds for us still the intense scientific interest it has always presented, a deep study of these cases will lead us to practical improvement in differential diagnosis and treatment.

Let us study together the clinical features of this disease and endeavor to find some adequate cause for it. If you have a case of nephritis you may have a high

degree of anemia due to the retention of poisonous substances and to the associated tissue-changes. In a case of carcinoma you have also something to explain the anemia. But progressive pernicious anemia is essential; there is no organic disease or lesion to explain it. The symptoms are that the patients feel themselves becoming gradually weak and weaker, the skin meanwhile assuming a pale, slightly lemon-yellow tinge. The emaciation is very irregular; some patients lose a great deal of flesh, but frequently others lose little or none at all. The feet become puffy when the patients stand or walk. There is dyspnea after slight exertion, palpitation of the heart, hemic murmurs, pulsating vessels, occasionally a venous hum, the pulse-rate often rapid. In the present case there is a soft systolic murmur, best heard at the base of the heart, surely hemic. Patients suffer with attacks of headache and vertigo and complain of ringing in the ears. The muscular weakness and pallor increase progressively. These are the familiar features of the disease. The condition of the stomach varies; digestion is impaired, and in some cases tremendously so. There is a tendency to hemorrhages, the mucous membranes bleed easily, and ecchymoses form in the retina frequently, in the serous membranes, brain, and other organs, sometimes on the skin, hemorrhages probably partly due to arterial degeneration and partly to capillary embolism. As a rule the disease presents but little disturbance of temperature, yet there are not infrequently sharp irregularities, and I have noticed a slow febrile movement as though there were some obscure toxic state of the system causing the variation. Nervous symptoms are not uncommon; paresthesiæ of the extremities, sensation diminished and retarded, the knee-jerks diminished or even lost, and in some cases an almost typical ataxic gait. These symptoms, however, are also found in intense secondary anemias, and post-mortem examinations reveal scattered spots of degeneration in the cord and systemic sclerosis of the posterior columns, secondary lesions due probably to some toxic influence. As the case advances the patients fall into an extraordinary condition of debility, with greatly impaired digestive power. The blood becomes almost watery, general edema appears, intercurrent attacks of diarrhea, hemorrhages, and then death.

During all this time you find that the lymphatic glands have not swollen at all. No evidence of organic disease is given. It is true that the very poor condition of the blood leads to an almost universal fatty degeneration, the result of deficient oxygenation. The heart and liver may thus become very fatty, but you will find no organic lesion to primarily explain the condition. There will be changes in the medulla of the bones, which appear not yellow but a dark-red, a change due partly to a diminution in the normal amount of fat, and partly to an increase in the number of nucleated red blood-corpuscles. But this again is a change not confined to cases of essential pernicious anemia. The spleen in some cases becomes moderately enlarged, in some cases so conspicuously enlarged that some of these cases have been termed splenic anemia; in many cases the size is not altered. We must remember that in some cases there is a great deal of digestive disturbance, and in the post-mortem cases presented for examination there is sometimes almost complete atrophy of the tubules of the stomach. This shows chronic gastritis with proliferation of cells and increase in the connective-tissue of the submucosa which becomes organized into a dense fibrous layer and which surrounds and grasps the gastric tubules, causing their atrophy in the same way that cirrhosis of the liver will produce atrophy of the hepatic cells. Another change constantly found in bodies in which death has resulted from pernicious anemia is the increased deposition of iron in the liver, pancreas, spleen, and kidneys, particularly in the liver, where the iron is deposited in the peripheral zone of the lobule. This points to a destruction of blood somewhere in the body, probably largely in the portal circulation, the products of which are collected in the liver; and corresponding to this the urine frequently contains pathologic urobilin. In addition the urine may contain an excessive amount of indican; and the total nitrogen-elimination is generally increased, this excretion going hand-in-hand with the excessive breaking down of the body-proteids due to the diminished entrance of oxygen to the tissues.

What are we to think of the cases of severe anemia not secondary to nerve-lesions—of the essential anemias, excluding those in which parasites or atrophy of the gastric tubules are found, the cases in which all the post-mortem changes seem effects and not causes? It seems certain that the dwarfed, deformed, and fragmented corpuscles, the hemoglobinemia, the excess of iron and pigment, point to an abnormal hemolysis, and, furthermore, experimental hemolysis has produced in animals a condition resembling pernicious anemia. On the other hand, the malformed macrocytes appear to be a sign of faulty blood-formation; and the nucleated corpuscles look like perverted attempts of the bone-marrow at hemogenesis. If the causes lie in defective hemogenesis, the remoter causes of this defective blood-formation are entirely obscure. But there is clinical and experimental evidence for conditions which can cause increased hemolysis, and these conditions are the formation in and absorption from the alimentary tract of toxic substances, the nature of which is to us as yet entirely unknown. It seems probable that the products of ordinary fermentation cannot produce this condition; the toxins are of more complex origin and nature.

In approaching the treatment of a case of pernicious anemia, you ought always to attempt to ascertain whether the case before you is one of those connected with atrophy of the gastric tubules. In some of these cases the catarrhal symptoms are marked and the power of digestion profoundly reduced; and such cases may properly be called pernicious anemia of gastric origin. You must not expect to find the stomach always dilated in these cases; sometimes the walls of the stomach contract and the organ feels like a narrow transverse thickened band across the upper part of the abdomen. In other cases the gastric symptoms have been slight, but careful investigation will elicit the fact that, although slight, they have been frequent and of many years' standing. This man has always bolted his food, has for years suffered from occasional attacks of gastric irritation and diarrhea, the motor power of his stomach is impaired, his gastric juices much reduced; his stomach contains no free hydrochloric acid; he can take but little food without distress; his debility is so extreme and his anemia so intense, we are forced to fear that atrophy of the tubules has occurred. If the changes in the gastric mucous membrane have not gone too far,

some of these cases respond well to treatment directed to the local conditions; but when the anemia is very intense, treatment directed to the alimentary tract will accomplish little.

There are certain general indications. The patient's blood cannot carry enough oxygen to supply his tissues and he surely has no oxygen to waste in muscular exertion; therefore absolute rest in bed is for some weeks imperative, and almost complete confinement to bed is advisable for a considerable period longer. General massage is an excellent adjuvant and should be consistently employed. Inunctions of cod-liver oil, given once daily, have seemed to me to improve nutrition, and they are being given to this patient.

The gastrointestinal tract demands the most careful diet and treatment, and in these matters each case must be studied for itself. This man's diet consists of finely minced Hamburg steak delicately broiled so that all the juices are retained, dry toast or stale bread, and hot milk with a little coffee in it. In the last few days he has seemed to enjoy eating, and he does not suffer from nausea. However the diet may be modified it must be highly nourishing, given in small quantities and often. Hydrochloric acid is generally indicated, and this man is given a couple of drops after each meal. His bowels have been loose, and we have been washing out his colon daily with warm water and following this with an injection of a weak solution of silver nitrate. Were not his stomach so well behaved with his present diet and treatment I should practise gastric lavage, and cases have been reported in which striking results have followed this procedure.

For the blood we have one drug that exerts over many of these cases a most marvellous influence—arsenic. Under its use some cases recover entirely; others improve greatly, only to relapse. The drug must be pushed to the limit of tolerance, 10, 15, or even 20 drops of Fowler's solution thrice daily, guarded with a little opium to counteract the tendency toward diarrhea. You must watch carefully for constitutional signs of overaction, as puffiness under the eyes and gastrointestinal irritation, and should these appear the dose must be reduced. An irritable stomach does not in itself contraindicate arsenic, as the stomach often improves under its influence. But should the drug aggravate the irritability of the stomach it should be administered hypodermically. Iron rarely does good early in the treatment; when convalescence is well established it may be advantageously combined with the arsenic. Lately bone-marrow (of lambs and calves) has been tried in the form of glycerol extracts, in some cases with reported good results. In extreme cases the hypodermic injection of large amounts of normal saline solution, direct transfusion of blood, and the injection of defibrinated blood have all been resorted to, in some reported cases to good advantage. Treatment must be persevered in for a long time after the blood has been brought back to a good condition; and the patient must be kept under the most careful dietetic and hygenic conditions, and guarded in every way against the all-too-frequent relapse. This man has been under treatment nearly a fortnight. He expresses himself as feeling better; his appetite has improved, he bears the large doses of arsenic well, and his blood has gained 7 per cent. in hemoglobin and 100,000 red cells over the estimation on admission.

ORIGINAL ADDRESS.

SOME REMARKS ON EUROPEAN SURGERY.[1]

BY W. W. KEEN, M.D.,
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PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY IN THE JEFFERSON MEDICAL COLLEGE.

THE Dean has requested me to give you a brief statement of some of my observations during the past summer in the course of a short surgical trip in Europe. I would be ungenerous were I not, first of all, to acknowledge the extremely courteous reception, not only in their clinics, but often also in their homes, which I had from all the surgeons whom I saw, whether they were English, French, German, or Swiss.

The time was when European surgeons paid very little attention to American surgical literature, but I found American surgical text-books and American medical journals on the table of almost every surgeon whom I had the pleasure of seeing, and the names of our best surgeons are known as well in Europe as they are at home.

The general impression made upon me by what I saw was that in matters of scientific research and of original investigations Europe is much in advance of us. The length of the course of study, and the support by the government of Pathologic and Bacteriologic Institutes, combine to foster original investigations in scientific subjects much more than with us. Our young men must necessarily earn their living, and as these investigations require a great deal of time and bring little, if any, direct income, there are but few who can devote their time to science, pure and simple. Another thing which fosters this spirit of original investigation is the governmental control of the Universities, at least on the Continent. Governmental control of the Universities has, as a natural result, that a bright young man, who is an assistant to a distinguished surgeon, is sure to have his ability recognized by promotion; first, to the chair of surgery in one of the minor schools, and, if he still shows ability and industry, of promotion to one of the more important schools. In this country we are obliged to depend wholly on private munificence; and such promotion to other schools than the alma mater of the young doctor is the exception rather than the rule. I am glad to say that in the last few years the establishment of a number of laboratories of research by generous donors is beginning to bear fruit. The recent generous appropriation by the Legislature of Pennsylvania to our own hospital will enable us to establish a similar laboratory of instruction and research. Would that it were so with every school in the land! We should not be jealous of each other, for each one profits by the discoveries made in the laboratory of a friendly rival.

But when it comes to practical surgery, whether it be of mechanical means or operative procedures or of careful antisepsis, I believe that American surgeons are quite the equals of their European brethren. In fact, as to antisepsis at least, I think in this country we are more careful, as a rule, than many of the surgeons I have seen abroad.

[1] A *résumé* of a lecture delivered at the Jefferson Medical College, Sept. 27, 1895.

I noticed especially, in the preparation of their patients for operation, that I never saw patients brought into the operating-room disinfected the day before as is our usual American custom. In clinical lectures and demonstrations upon patients, not only were the parts manipulated by the operator, but sometimes also by members of the class, and the disinfection was not done until after this demonstration had been made. Then, however, it was very careful, and especially in the thorough scrubbing with soap and water, followed by alcohol or ether, and then with a sublimate-solution. I was particularly impressed, however, with the fact that most of the surgeons I saw washed their hands for a longer period, I think, than many of our American surgeons. So much so that I made up my mind that whenever I had nothing else specially to do I should employ my time scrubbing my hands. On the other hand, Mr. Horsley told me that he had gone to the opposite extreme and usually prepared his patients for 48 hours, instead of 24, before operation. The field of operation was generally surrounded with towels, which frequently became more or less displaced, and are not as efficient in their protection as large sheets, as we more commonly use in this country.

On the continent the needless exposure of patients in many cases struck me rather unpleasantly. Both women and men were brought in almost, and, in many cases, entirely nude, when it seemed to me not a necessity. We are more careful of the ordinary proprieties of life, it seems to me, in this respect, with no diminution of surgical safety and a great gain to social decorum.

I can scarcely wonder at the frequent deaths from chloroform which one sees so constantly reported in the medical journals abroad. In six weeks I saw six patients within an ace of dying. The rule that my old teacher, Prof. S. D. Gross, always laid down, that chloroform was to be given with plenty of air, seemed to be almost ignored. The chloroform was poured in considerable quantities on a towel or napkin, which was pressed close down on the patient's face, so that he breathed almost absolutely pure vapor of chloroform. In each of the six instances I speak of the operator had to discontinue his operation, and the patients were restored with difficulty by artificial respiration and rhythmic traction of the tongue. Apparatus such as Clover's or Ormsby's, for the administration of any anesthetic, was rarely employed excepting in England.

On my arrival in London Sir William MacCormac very kindly invited me to be present at the examinations for the Royal College of Surgeons, and I was extremely interested in observing their methods, which struck me as decidedly superior to our own. The Court of Examiners consists of ten well-known surgeons, such as Marsh, Morris, Davies-Colley, Anderson, Owen, Howse, Page, McCarthy, Godlee, and Sir William MacCormac, the President. The examinations were held in the examination-hall of the Royal College of Surgeons on the Thames embankment, near the Savoy Hotel. They were held at what seemed to me a rather curious hour, from 5 to 10 P.M., with an interval of half an hour for a very simple lunch or supper.

The examiners are divided into five committees of two each, and every one who desires to take his degree in surgery is obliged to pass the Court of Examiners. You will observe that the examiners I have named differ from our own in this respect that they are all active teachers, whereas the Pennsylvania statute forbids any teacher to be an examiner, on the ground, I suppose, of possible favoritism. This is avoided by the Court of Examiners by having no teacher examine students from his own school. Every candidate has to write a thesis on an assigned subject and the theses are divided equally among the five committees, and thus are read and passed upon by two examiners.

The practical character of the examination, however, especially pleased me. For instance, on one evening, in a large room, five healthy men were brought in nude, with the exception of little bathing-tights covering only the pelvis and genitals, and they were placed upon five tables with two examiners at each table. Five students were then admitted and each one assigned to one of the tables. He was then examined carefully as to his knowledge of the normal surgical anatomy of the body. For instance, he was told to "Mark on this man's thigh the course of the femoral artery with a dermatographic pencil," and then was asked, "What is the relation of the vein and nerve to the femoral artery? Point out the borders of Scarpa's triangle. Mark on the skin the line of the carotid artery; the triangles of the neck. If a wound were inflicted here in the middle of the arm, what structures would be divided if the cut went to the bone? Where does the posterior tibial artery run at the ankle-joint, and what is the relation of its neighboring structures? Mark the boundaries of the liver. Mark where the gall-bladder is situated. Indicate the point of bifurcation of the aorta," etc.

After this had been continued for some time, each man was directed to a tray containing a very complete set of surgical instruments, from which the examiner would select, for instance, a lithotrite, and ask him what the instrument was and direct him to show the method of using it. He was obliged to find a trocar and canula, a lithotomy-staff, a grooved director, etc., and to show how they were used. This examination covered perhaps fifteen or twenty of the more important surgical instruments.

Another clinical examination was made in which five patients instead of five healthy men were utilized, and each student in turn was required to examine the patient, obtain his history by questions, examine the tumor, etc., by palpation or other suitable means, and was required to make his diagnosis and give his reasons for the diagnosis, the differential diagnosis, and the treatment. At another stage of the examination, each committee of two had on a table 10 or 15 specimens, dried, or more commonly in jars, from the Hunterian Museum, and the candidate was asked what the specimen was, what was the disease, the symptoms, diagnosis, and especially the pathology of the disease and its treatment.

After the examination was concluded on the second evening that I was there, those who had passed were called in before the entire Court, who rose to receive them, and they were addressed in a few practical pertinent remarks by the President, and their certificates of membership in the College were handed them.

This is the only "Commencement" which is held, if such it can be called, for there is no audience, no music, no flowers, no formal oration, but the occasion is one of the simplest.

The Court of Examiners are elected by the Council

of the Fellows for a period of five years. During the past year four examinations for membership besides two for the Fellowship were held. Of the 79 candidates for Fellowship, 45 were passed, 30 were postponed for reexamination at the end of 6 months and 4 for a year. For the membership 937 candidates were examined, of whom 579 were passed and 378 were postponed. The fees paid by all the candidates, amounting to a little over 1000, were somewhat over $50,000, and the fees paid to the Court of Examiners, as well as the examiners in midwifery, were nearly $30,000. Each of the Court of Examiners in Surgery receives about from $2000 to $2500 a year. The Court of Examiners in Medicine, who are elected by the Royal College of Physicians of London, examined 905 candidates, of whom 521 were passed and 384 were postponed. The Royal College of Physicians also elects, in conjunction with the Royal College of Surgeons, the examiners in midwifery, who passed upon 824 candidates, of whom 558 were passed and 268 were postponed.

You will observe, therefore, that not only are the examinations, in my judgment, more thorough and more complete than ours, but also they are much more severe; the percentage of men who failed being far greater than is usually the case in this country.

In London I had the pleasure of seeing quite a large number of operations by Messrs. Horsley, Howse, Davies-Colley, Barker, Jacobson, Fenwick, and others. I attended also a lecture by Mr. Horsley, in which he demonstrated the very important observations that he has made as to the cause of death in cases of cerebral hemorrhage, tumor, depressed fracture, and gunshot-wounds, as well as of violent concussion of the brain. He has shown unquestionably that such patients die from failure of the *respiration*, and not, as we have hitherto supposed, from failure of the *heart*. This had been already investigated by Duret, Bergmann, and others, but the conclusive proof has been given by Mr. Horsley. A dog was secured to a board after being chloroformed. The pulse was traced on a revolving drum by a pen by means of a canula inserted in an artery. The respirations were similarly marked by another pen. Seconds of time were marked by a third, and the instant when a ball was fired it was also marked upon the same drum by means of a fine wire passing across the muzzle of a pistol, the breaking of which by the ball recorded on the drum the instant of discharge. A ball was then fired through the brain of the dog. The instant that the ball penetrated, the respiration stopped and was very slowly reestablished, but gradually failed and ceased a second time as the blood poured out in the cranial cavity, producing compression.

The experiment was strikingly successful and the practical deduction drawn from it was equally important and should alter the treatment that we have heretofore employed. Usually, after any severe injury to the head, the patient has been stimulated by alcohol with a view to increasing the action of the heart, whereas, as Mr. Horsley has shown in the *Quarterly Medical Journal* for July, 1894, the proper practice would be artificial respiration until, by surgical means, the condition producing the compression has been remedied. As he has shown also in the paper I have mentioned, this means, namely, artificial respiration, has saved more than one patient who who would have died upon the table had it not been used.

The opponents of vivisection will find but little comfort in such practical results in the saving of human life from experimentation upon animals.

The first surgeon whom I saw in Germany was Prof. Krause in Altona, opposite Hamburg, and I found him an enthusiastic, earnest, and able surgeon. I was greatly interested in a number of cases that he showed me, such, for instance, as several of skin-grafting, in which he had grafted not the superficial layer of the skin only as in Thiersch's method, but the entire thickness of the skin. He is very careful, however, to remove all of the fatty tissue from the under surface of the graft. I saw several cases in which he had apparently permanently healed several ulcers of the leg by this method, which certainly deserves a trial at the hands of American surgeons. I saw him also operate upon an inguinal hernia, and he told me that in femoral hernia he had adopted Trendelenburg's method of chiselling off a piece of the pubes and turning it over on a hinge of periosteum, thus closing the femoral ring by bone.

Unfortunately Prof. Krause had no case at the time for removal of the Gasserian ganglion. You know, perhaps, that he and Hartley, of New York, independently and nearly at the same time devised the osteoplastic operation for the removal of the ganglion. He showed me, however, a number of photographs of the specimens which he had removed, which have been published in the *Münchener medicinische Wochenschrift* for this year. The specimens showed a more thorough removal than I had believed possible and more thorough, I think, than most other surgeons have accomplished. The specimens included the entire ganglion with the second and third divisions of the fifth nerve (the ganglion being torn off from the first division at its origin from the ganglion) and the root of the fifth nerve as far back, evidently, as the pons.

It will certainly be my aim hereafter, and I think it should be of surgeons in general, to effect as thorough removal as this. It is accomplished by dividing the second and third divisions of the fifth, seizing them with forceps and by traction tearing out the ganglion and its roots. Of five cases that Krause has operated on all have recovered, and not one of them suffered from any trouble with the eye, though one of them was threatened very seriously for a time with ulceration of the cornea.

Unfortunately Prof. Schede, one of the most brilliant operators in Europe, was incapacitated from operating by reason of an infected finger, but he kindly showed me over his splendid new hospital in Hamburg, one of the most complete that I have ever seen.

In Kiel I was most kindly received by Prof. von Esmarch and his already distinguished first assistant, Dr. Bier.

I was much struck with the systematic means of illustration which Prof. von Esmarch is constantly accumulating, and I do not wonder at the delightful illustrations in his books. A large case with many drawers was filled with water-colored drawings, literally by the hundred, of all sorts of pathologic and surgical cases and specimens.

The number of patients with tuberculous troubles in the hospital at Kiel was extremely large. I think I never saw so many tuberculous patients brought together. Dr. Bier is making a very thorough study of the effects of passive congestion, especially in tuberculosis of joints,

by means of a rubber bandage encircling the limb with sufficient pressure to produce slight congestion.

A number of very interesting operations were performed in his clinic, but I have not time to describe them in detail. In fact, I can only mention to you a very few of the operations and patients that I saw in the course of my little trip.

I was much interested in the cases of goiter which I saw operated upon by Prof. Kocher in Berne, who last spring reported to the German Surgical Society an extremely interesting series of 1000 cases—more than any other surgeon has ever operated upon. He operated upon two and Prof. Roux, of Lausanne, operated upon four in one morning. Prof. Socin, of Basle, operated on another, and I saw also several other glands removed by other surgeons.

The incision that the Continental surgeons now commonly make passes from one side of the neck to the other in a very sharp and rather long curve, with the convexity downward toward the sternum. More frequently they operate without any anesthetic, or by a number of punctures in the skin they deaden the pain of the first incision by means of cocain. The pain did not seem to be at all beyond endurance.[1] These men of large experience are decidedly of the opinion that the dangers of the operation are much lessened by operating without anesthesia. There is much less turgescence of the veins than when an anesthetic is used, none of course from vomiting or cough, and the absence of both of these phenomena after the operation diminishes the danger of complications. Another advantage also is that when the inferior thyroid artery is being dissected and tied, by engaging the patient in a conversation for a few minutes, the possibility of including the recurrent laryngeal nerve in the ligature is avoided, as the altered voice would immediately warn the surgeon of the danger.

In extirpation of goiter the hemorrhage was much less than I have before seen, by reason of the extremely careful hemostasis by means both of very numerous hemostatic forceps and double ligation of the larger vessels before division between the ligatures. Almost invariably the upper part of the tumor was first attacked and the superior laryngeal tied; then the thyroidea ima and then the inferior thyroid vessels. The method of enucleation for cystic growths, which has been so popularized by Socin, is adopted in all cases of cystic tumor suitable for such operation, and is considered preferable to extirpation, as it avoids any possible injury to the recurrent laryngeal, and also avoids the possibility of cachexia strumipriva, by leaving all the gland which is not diseased.

In Heidelberg, Prof. Czerny and his first assistant, Dr. von Beck, were most kind and showed me everything in their power. I saw, among others, an interesting case of actinomycosis of the right iliac fossa, which presumably arose in the appendix, an admirably done suprapubic cystotomy, and a number of other important cases which I have not time to mention.

In Berlin I was greatly interested in the clinics of Prof. von Bergmann and Prof. Bardeleben. The latter has, unfortunately, since died. I was especially interested in seeing a number of patients with fractures of the leg treated by the ambulant method with plaster-of-Paris. In connection with this method I learned one point, as to which I had not been especially careful heretofore, namely, that the foot should be slightly flexed when the plaster is put on, so that the patient walks upon the heel and not on the sole of the foot, thus avoiding either breaking the cast or producing pressure at the ankle.

Unfortunately I have not time to tell you of the many interesting things shown me by Prof. Kraske in Freiburg, Madelung in Strassburg, Championnière, Terrier, Péan, Hartmann, and others in Paris, but with these few illustrations, which I hope may have been of interest, I must close.

[1] Since this lecture was delivered I have operated upon one case with cocain only, and the patient assured me that he suffered but little pain. I was greatly pleased with the method.

CLINICAL MEMORANDA.

A URETHRAL CALCULUS OF LARGE SIZE.

BY P. M. ASHBURN, M.D.,
OF BATAVIA, OHIO.

THE opportunity of observing and operating in the following case I owe to Dr. T. A. Mitchell, of Owensville, Ohio, who had had charge of the case for 2 days before the time of operation, though he was not allowed to operate sooner. I think the case worthy of record because of the very unusual size of the stone. All the works on surgery, five or six in number, to which I have access here, speak of urethral calculi sometimes reaching a large size, but none of them says how large that size may be, or speaks of stones much larger than beans. Whatever may constitute large stones in the urethra, I cannot believe that many, if any, other people would allow a urethral stone to reach the great size of this one. For 30 years the patient had carried the stone in his urethra, and for 30 years had had dribbling of urine. In consequence of this he avoided the society of his fellows to such a degree as to be considered "queer." Still in all that time he never consulted a physician about the trouble, nor in any way sought relief.

He was a large man and by nature a strong one, but the 30 years of pain and worry had worn upon him a good deal, and he looked older than his years, and somewhat cachectic. His name was J. U., 43 years of age, by occupation a stonemason and farmer. His history is as follows:

His father is 75 years old and rheumatic; the mother is 65 years old and feeble. The patient has 6 living brothers, 1 of whom has vesical trouble, and 4 living and healthy sisters. The patient has had no sickness except that under discussion, and no injury except a scald as a small boy. He has been married for 5 years, and has a son 2 years old. When 15 years of age he was one day, while urinating, seized with violent pain in the perineum, and noticed a lump there. As he remembers it, the lump was the size of a cherry. The stream of urine at once stopped, and the patient was in such pain that he had to be carried home. Catheterization was at once performed, and without trouble, but it had to be continued for a month, the boy staying in bed for 2 weeks of the time. After that he always had pain and difficulty in passing urine, and almost constant dribbling of urine. For a voluntary passage he had to

grasp the penis far back and press inward at the sides and downward from above or upward from below.

Three years ago and again 2 months before the last trouble, he had acute attacks of pain in the perineum, with increased difficulty in urination. The attacks subsided, however, without treatment, and the patient kept about his work.

On September 3d, 1895, he again began to have pain in the urethra, with increased difficulty in urination. He continued to work, however, until September 9th, when he consulted Dr. Mitchell, who found a large lump in the perineum, which the use of a sound readily showed to be a large stone. Dr. Mitchell also recognized beginning infiltration of urine in the scrotum. He advised an operation, but the patient ridiculed the idea. The next day, however, he sent for the doctor, who then found the scrotum greatly infiltrated and intensely red and tender. The infiltration and swelling were greatest on the left side of the scrotum and extended along the left spermatic cord in such a way as to excite a suspicion of hernia.

Operation was again advised, and this time consented to, as the patient believed his life to be in immediate danger. The following morning Dr. A. W. Ashburn and myself saw the man in consultation with Dr. Mitchell. He then lay in bed, suffering great pain in the hypogastrium, inguinal regions, and scrotum, trying frequently to pass urine, and being unable to do so. After great effort, however, he did manage to pass a small amount. It was turbid and ammoniacal. The scrotum was much swollen, evidently infiltrated with urine, dusky-red and very tender. Palpation back of the scrotum revealed an indurated mass the size of a goose-egg, which was extremely tender to the touch. A sound introduced into the urethra could only be passed as far as the posterior penile portion, where it gave the clear, loud click of contact with a stone.

The genitals and perineum were at once shaved and cleansed, the patient placed under ether, and put on the table in the lithotomy-position. The stone could then be roughly outlined. The incision, 2 inches long, was then made in the median line of the perineum. Immediately there came a gush of very fetid pus of about an ounce. After its evacuation the incision was deepened and carried immediately to the stone, which was then grasped and easily removed. Back of it lay another and smaller stone, and one or two small fragments.

The large stone lay in the membranous urethra, encroaching on both the bulbous and prostatic portions. The urethra was much thickened and greatly dilated, as can be seen from the description of the stone. After its removal I could easily pass my little finger into the bladder. A free incision was made over the left side of the scrotum and about an ounce of straw-colored fluid ran out of it. Two stitches were then taken in the anterior end of the perineal wound, a catheter passed into the bladder, drainage-tubes into the wounds, and the whole dressed with iodoform gauze, the catheter being brought out through the dressing.

The following day the catheter became occluded and was withdrawn and found to be covered and partly filled with a phosphatic deposit. The second day after operation the wounds were dressed, and looked well. The scrotum, however, was still much swollen. Since that time improvement has taken place steadily, though somewhat retarded by an attack of malarial fever. That, however, yielded to quinin, and the patient is now in good condition, the wound granulating, and the urine, under the use of boric acid, is no longer ammoniacal, but acid and sweet.

The stone, of which an illustration is herewith given, is, I think, about as large as has ever been removed from the urethra. It is 2⅛ in. long and 1¼ in. in diameter. It is white on the outside, very hard, and is shaped and looks much like a potato. It weighs dry 660 grains. At one end of it is a polished surface that corresponds with a similar surface on the smaller stone, which lay against it. This stone is of the same appearance, shaped much like a Lima bean, and weighs dry 60 grains.

INTUBATION OF THE LARYNX IN A CHILD FOURTEEN MONTHS OF AGE, WITH REINTRODUCTION OF THE TUBE, AND RECOVERY.

BY MELVIN M. FRANKLIN, B.S., M.D.,
OF PHILADELPHIA.

IN looking over records accessible to me, I find that cases of intubation in children under eighteen months of age, with recovery, are exceedingly few, and that the mortality increases greatly as the age diminishes. It is for this reason that I report the following case.

On September 12th, while attending another member of the family affected with diphtheria, my attention was attracted to Stephen B., fourteen months old. I found the pulse-rate accelerated and a slight elevation of temperature, with no other symptoms, except congestion of the tonsils and fauces.

Early the following morning I was summoned in haste to the case, and found the little patient in a precarious condition, with a temperature of 103.8°, a pulse-rate of 160, and all the symptoms of intense dyspnea, with every few minutes a paroxysm of croupy cough, ending in the expectoration of quantities of stringy white membrane. The throat on examination was found to be covered with membrane that could be easily detached, leaving a rough bleeding surface. The mother stated that during the early morning the child's breathing had become more and more labored and the croupiness had greatly increased.

Hastily procuring the necessary assistance and instruments, I introduced a No. 1 tube of O'Dwyer's pattern, and after the operation the symptoms were in a great measure relieved. Two minims of tincture of ferric chlorid, in a mixture, were ordered to be given every hour, the throat sprayed with a 1½ per cent. solution of

papayotin (Merck), and a second mixture to be given every third hour, containing tincture of digitalis and tincture of nux vomica, of each two minims, combined with $\frac{1}{64}$ grain of mercuric chlorid.

As the membrane was still visible on September 18th the tube was not disturbed until the following day, when, on the evening of the 19th (six-and-a-half days after introduction), I removed it, leaving instructions to have the throat sprayed at short intervals. Returning in two hours, the condition of the child was such that a reintroduction of the tube was necessary, and this was followed by immediate relief.

For the second time the tube was allowed to remain for a period of six days, and again, as the temperature was only slightly elevated and no membrane visible, I removed it. After this the breathing was not as free as could be desired, but I allowed the tube to remain out, with instructions to send for me should the child's condition require it, and this proved to be the case a few hours afterward. The tube was with difficulty introduced for the third time, owing to the swollen condition of the parts, but with no less gratifying results. The patient four-and-a-half days later began to refuse nourishment, and the tube was removed for the last time.

The general condition now steadily improved, with the exception of a paralysis of the pharyngeal muscles, permitting liquids to regurgitate through the nose. There also existed a slight nephritis, evinced by albuminous urine, but under hygienic and tonic treatment these complications rapidly disappeared and the child entirely recovered.

1518 NORTH BROAD STREET.

MEDICAL PROGRESS.

Sudden Death Due to Cardiac Syphiloma.—At a recent meeting of the Clinical Society of London, DUCKWORTH (*British Medical Journal*, No. 1816, p. 974) reported the case of a strongly built man, 35 years old, who, while walking in the street carrying his little boy, suddenly fell down and expired. Only a meager antecedent history was obtained, but there was evidence of old syphilitic disease on the tongue and on the glans penis. A small gumma was found in the left lung. The heart weighed 22 ounces, and was bound by firm adhesions to the pericardium, both at the apex and the base. The ventricles were hypertrophied and dilated; the valves were normal. In the wall of the left ventricle above the apex was a round depression nearly an inch in diameter and covered by long adhesions. This was due to a thinning of the wall, with much endocardial thickening. A large aneurysmal pouch was found behind the posterior cusp of the mitral valve. This appeared from without as a tumor growing from the base of the heart, and completely covering the left auricle. Its walls were half an inch thick, and the pericardium was closely adherent over it. On section the muscle was replaced by tough, fibrous tissue, with foci of gelatinous matter. The endocardium was greatly thickened and fibrous. Microscopic examination proved the formation to be gummatous in nature, with patches of caseation. The smaller vessels showed signs of endarteritis. These appearances were taken to indicate a recent gummatous growth at the base of the left ventricle, and a similar but older one near the apex of that cavity. Investigation showed that in 14 similar cases death occurred quite suddenly in eight. But one case of the whole number was in a woman. The mean age of all the patients was 32 years. Many of the cases appeared to have been previously devoid of urgent symptoms. In some there had been pericardial pain. The valves were usually not involved, and hence murmurs were not to be heard. The ventricles and their septum were the common sites of the growth. The tendency to fatal and sudden syncope was probably attributable in part to endarteritis affecting the coronary vessels and possibly to the formation of embolisms in the branches of the coronary arteries, as a result of the dislodgment of fragments from the interior of aneurysms.

Resection of the Apex of the Lung.—At the recent French Congress of Surgery, TUFFIER (*Abeille Médicale*, October 28, 1895, p. 342) presented a man, 29 years old, in whom four years previously he had performed pneumonectomy. At that time the patient presented the signs of tuberculosis localized to the apex of the right lung. An incision was made in the second intercostal space and an extrapleural pneumothorax established by detaching the parietal layer of the pleura over a considerable extent. The apex of the lung at once presented and the diseased area, as large as a nut, together with healthy lung-structure for a distance of 2 cm. in every direction, was excised. The wound was closed without drainage and the patient was up and about on the ninth day. Tubercle-bacilli had been found in the sputum and were also found in the excised tissue. The patient had followed various pursuits in the four years following the operation, but had suffered from no pulmonary disturbance, and physical examination failed to disclose any evidence of return of the disease. It was not contended that similar operative intervention is generally applicable, but it was maintained that exceptionally it is indicated absolutely.

The Relation between Uric-acid Excretion and Leukocytosis.—As the result of experimental and clinical observations, KÜHNAU (*Zeitschr. für klin. medicin*, B. xxviii, H. 5, 6, p. 534) has found that a group of diseases attended with leukocytosis are characterized also by increased excretion of uric acid. This increase is not to be attributed to the febrile process alone, as it may attend afebrile diseases (cachectic leukocytosis). Rapid subsidence of leukocytosis corresponds with increased elimination of urates. Experimental leukocytosis is attended with increased elimination of urates, which reaches its maximum with the disappearance of the leukocytosis. Increased excretion of uric acid may be induced without the intermediation of leukocytosis by the administration of substances rich in colorless blood-cells (aseptic pus, thymus-infusion). Injections of nuclein induce directly increased elimination of urates, for which the leukocytosis developed at the same time cannot be held responsible. Colorless blood-cells constitute, if not the exclusive, the most important source of uric acid.

The Diagnostic Value of Fluid Discharges from the Ear in Head-injuries.—From a variety of considerations, MILES (*Edinburgh Medical Journal*, No. 485, p. 442) arrives at

the conclusion that, while in the majority of cases in which bleeding and welling-up of cerebro-spinal fluid from the ear are present, a fracture of the middle fossa of the skull exists, these signs are not pathognomonic. The fracture is in many cases, perhaps in most, simply a coincidence. The great bulk of the hemorrhage comes from the vessels of the arachno-pial membrane and of the temporo-sphenoidal lobe of the brain and not from the fractured bone. The path of the discharges is along the sheath of the auditory nerve, through the lamina cribrosa to the vestibule, thence through the middle ear and the ruptured membrane to the external meatus. Excluding the extra risk of sepsis, the prognosis is on the whole better when these signs exist than when they do not.

THERAPEUTIC NOTES.

Anesthesia-Statistics.—GURLT (*Archiv für klinische Chirurgie*, B. li, H. 1, p. 91) tabulates as follows the results of a collective investigation among the members of the German Surgical Society of Berlin into the frequency and fatality of anesthesia induced by various agents and combinations:

Anesthesia with chloroform.

	Cases.	Deaths.
1890–91	22,656	6 = 1 : 3776
1891–92	72,593	31 = 1 : 2341
1892–93	38,495	9 = 1 : 4278
1893–94	33,068	17 = 1 : 1946
1894–95	34,412	25 = 1 : 1376
	201,224	88 = 1 : 2286

Anesthesia with ether.

	Cases.	Deaths.
1890–91	470	...
1891–92	7,968	...
1892–93	6,213	...
1893–94	11,669	2 = 1 : 5834
1894–95	15,821	5 = 1 : 3164
	42,141	7 = 1 : 6020

Anesthesia with chloroform and ether in combination.

	Cases.	Deaths.
1890–91	1,055	...
1891–92	1,854	1 = 1 : 1854
1892–93	1,209	...
1893–94	3,896	...
1894–95	2,148	...
	10,162	1 = 1 : 10,162

Anesthesia with chloroform, ether, and alcohol in combination.

	Cases.	Deaths.
1890–91	417	...
1891–92	2044	...
1892–93	979	...
1893–94	750	1 = 1 : 750
1894–95	1554	...
	5744	1 = 1 : 5744

Anesthesia with ethyl bromid.

	Cases.	Deaths.
1890–91	27	..
1891–92	2433	1 = 1 : 2433
1892–93	2095	...
1893–94	2986	1 = 1 : 2986
1894–95	1426	...
	8967	2 = 1 : 4483

Anesthesia with pental.

	Cases.	Deaths.
1891–92	219	1 = 1 : 219
1892–93	378	2 = 1 : 189
1894–95	34	...
	631	3 = 1 : 210

Pseudoleukemia Successfully Treated with Arsenic Subcutaneously.—KATZENSTEIN (*Deutsches Archiv für klinische Medicin*, B. 56, H. 1, 2, p. 121) has reported the case of a man, 37 years old, presenting characteristic symptoms of pseudoleukemia in whom a cure was effected by the subcutaneous injection of progressively increasing doses of solution of potassium arsenite. For two months the patient had observed glandular swellings throughout the whole body, and for several weeks a sense of oppressive pain beneath the left costal arch. He suffered also from insomnia, anorexia, and debility; and his appearance was anemic, cachectic, and emaciated. Inguinal, axillary, cervical and other lymphatic glands were enlarged, as was also the spleen. The erythrocytes numbered 4,720,000 to the c.mm., the leukocytes 12,200. The former were free from poikilocytosis and nuclei. Some of the multinuclear leukocytes were eosinophilous. The patient complained beside of intense prurigo. Epistaxis recurred from time to time and the lower extremities were edematous. In the course of six months in the neighborhood of one-hundred injections of solution of potassium arsenite were made in the back on either side of the vertebral column, with the result of effecting disappearance of both objective and subjective symptoms. At first 0.1 c.cm. (♏ss) properly diluted was injected and the dose was gradually increased every third day 0.05 c.cm. (♏ℨ) until 1 c.cm. (♏xv) was injected daily, a free interval being permitted every two weeks. Finally 0.6 c.cm. (♏ix) gradually increased to 1 c.cm. (♏xv) was injected twice daily. Then the doses were gradually reduced until the treatment was discontinued and the patient was dismissed as cured. At the time of report there had been no return of the symptoms for a year. The patient had a previous history of syphilis.

In the Treatment of Herpes Zoster ROBIN (*Bull. Gén. de Thérap.*, October 30, 1895, p. 359) recommends the application on cotton of a powder constituted as follows:

Starch	℥iv.
Zinc oxid	℥j–℈iv.
Camphor	gr. iv–gr. xii.
Opium	gr. iv.—M.

For the accompanying neuralgic pain a pill of the following composition may be administered three or four times a day:

Extract of stramonium, Extract of hyoscyamus	of each gr. ⅛.
Extract of belladonna	gr. ⅓.—M.

For Acute Coryza.—

℞.—Chloralis . . . . . gr. x.
Olei ricini . . . . . f℥iv.—M.
S.—Apply to the cleansed nasal mucous membrane.

Practitioner, vol. lv, No. 5.

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POLITICS AND THE INSANE.

UNDER this title Dr. Henry Smith Williams has contributed a popular article to the *North American Review*, in which he makes an indiscriminate attack upon the management of the insane by the "politicians." The tenor of Dr. Williams' article is in accord with that of a species of writing, now rather common, in which there is a tendency to decry anything that is suggestive of "politics." In a country so devoted to politics as our own—one, in fact, whose institutions are essentially founded on popular government, this outcry against everything political has seemed to us illogical and unwise. It is not only dangerous to the country at large, but it sooner or later leads those who indulge in it into reckless misstatements of facts and into a pharisaical condition of mind which unfits them for forming impartial judgments. Dr. Williams' article suggests these thoughts, both by its tone and by its matter.

We are not concerned here, however, with anything that Dr. Williams has written, except his unjust onslaught upon the present management of the Philadelphia Hospital. He has evidently taken no pains to make a personal inspection of the institution or to verify his alleged facts, but has relied largely upon a letter from an unnamed writer, whose statements, to say the least, are highly colored.

These statements are to the effect that the insane in the Philadelphia Hospital are consigned to "wretched, crowded, dark buildings that have been odious and odorous for half a century, with no facilities for out-of-door exercise or occupation;" that "within the buildings the allowance of fresh air equals but a few square feet per patient;" that "all in all, the condition of the insane here is one of the saddest spectacles to be seen in this country;" and that "the politicians have obstinately resisted every effort for improvement." Dr. Williams concludes, from this lurid picture, that the reason the politicians resist efforts at improvement is that the existing system gives them better facilities for patronage than could be hoped for under an improved system. In other words, their motive is to retain the spoils of office.

The exact facts about the present management and condition of the Insane Department of the Philadelphia Hospital are far other than those described in these exaggerated and misleading statements. After the disastrous fire of a few years since the old building for the insane was largely rebuilt and entirely renovated. New wings and additions, including a model kitchen, have since been erected, and the whole atmosphere and appearance of the institution have been changed. So far from this large and commodious group of buildings being "odious and odorous for half a century," it can be said that they are remarkably free from bad odors, and most of them from the burden of all these years. Every one of them has been remodelled, replastered and repainted during the past five years. The new additions, costing $229,000 (more than a quarter of a million dollars), were erected three years ago, and have been pronounced, by competent judges, satisfactory in every way. As to air-space, the ceilings are from 20 to 35 feet high and are not exceeded in any hospital in the State. No ward is overcrowded, and each is well ventilated and heated. All of these facts can be amply verified by personal inspection. This hospital has what no other State hospital has in equal degree, sitting-rooms for day distinct from sleeping-rooms for night. It has a splendid dining-hall, 220 x 100 feet, comfortably seating 1000 persons. It has larger airing-courts than any State hospital, although, of course, it is without much land for farming or trucking. Over 50 per cent. of the patients are usefully employed.

This hospital takes from the dregs of a great city, and its population in consequence is physically much below that of the State hospitals; yet its patients make almost all of their own clothing, for both men and women, and in addition there are shops for making brushes and shoes. Finally amusements are given regularly in a large assembly-room.

The condition of the insane is always a sad spectacle, but it is no sadder at the Philadelphia Hospital to the eye of a true alienist and lover of justice than it is in any gilded asylum in the land.

The "politicians" of Philadelphia, against whom Dr. Williams inveighs, are the members of the present board of Charities and Correction. They are appointed by the Mayor, and represent both political parties. No word of suspicion has ever been whispered against any one of them in either his private or public capacity. They have been taken from the legal and medical professions, and from active business-life in this city, where they are all thoroughly personally known; and few, if any, of them, have been prominently identified with politics. We do not see how a public board could be chosen of more representative and responsible men.

Finally the present superintendent of the Philadelphia Hospital was chosen after a competitive examination under the civil service rules, with the highest average among seven applicants. He has always, according to the medical chief, Dr. Hughes, joined the latter in every move for the improvement of the insane. All appointments and discharges in the insane-department are controlled by the medical chief, and politics is no factor in their cases.

We do not hesitate to say that the Insane Department of the Philadelphia Hospital under its present management compares favorably in cleanliness, hygienic conditions, and general welfare of its patients with any State hospital, and that the authorities, who have had much to contend with, including popular prejudice, are deserving of great credit for what they have accomplished. The truth is, this hospital suffers from a bad reputation which it acquired years ago, before the improved management under the new city constitution made it what it is to-day. Dr. Williams, and others who like him do not take the pains to verify their "facts," simply repeat old calumnies which no longer have a basis.

The Philadelphia Hospital is a great public charity, which for years has been one of the most important centers for teaching and for medical science in this country. Those who criticise it should at least make themselves familiar with the facts.

We should like to ask Dr. Williams what is his remedy for the political control of public hospitals for the insane? Is there any guarantee that boards appointed by the State authorities will be more intelligent and public-spirited than the present Board of Charities and Correction, appointed by the Mayor, and composed of men living here right in our midst? Is not such a board, in fact, more directly under public surveillance than a State board?

The truth is that the faults in our asylums are not so much in the political machinery as in the abuse of it. No dispassionate observer will deny that these abuses have been great in some, even many, instances. But they can be, and even have been, just as great under State as under municipal control. Because these abuses abound in New York and Chicago it does not follow that they occur in Philadelphia, and no upright judge will claim that they do occur at present in the Philadelphia Hospital.

We suggest that the zeal of political reformers should not lead them to misstate facts, and that even the common sense of a mugwump should teach him that public institutions must be under political control.

SERUM-THERAPY AND DIPHTHERIA-ANTITOXIN.

WHILE a great deal has been said of late about the effect of injections of diphtheria-antitoxin, comparatively little study and attention have been bestowed upon the effect of the serum itself when injected into a human being. It is rather strange that so many physicians should have taken it for granted that the serum is inert. If this assumption proves to be without foundation, then we have another and important disturbing factor introduced into the already complex problem of determining the real practical value of the diphtheria-antitoxin treatment.

At a recent meeting of the New York Academy of Medicine an attempt was made to clear up this part of the subject. Dr. Henry Dwight Chapin detailed a series of experiments that he had made on animals with a view of determining the effect, if any, of injections of serum obtained from healthy horses. These experiments prove in a general way that the injection of the horse-serum produces a

moderate reduction in the number of red blood-globules, and causes congestion of the spleen, congestion and cloudy swelling of the kidneys, and sometimes areas of fatty degeneration. Most of the experiments were performed upon rabbits. These results indicate that it is no longer wise to look upon the serum as an inert and harmless substance, and suggest that greater caution should be observed in adopting this treatment. Several observers have noted that the transfusion of the blood of the lower animals into the human subject is followed by a temporary rise of temperature and an acceleration and weakening of the heart's action, and that in addition to a marked destruction of the red blood-cells there have been pathologic changes observed in the kidneys and hemopoietic system. An erythema, similar to that so commonly seen after the administration of the diphtheria-antitoxin, has been known to follow the injection of the plain serum from a healthy horse.

All this would seem to show very clearly that the serum itself is a powerful agent; yet there are not lacking experimental observations opposed to this view. For example, Dr. William H. Park, at the meeting already referred to, said that recently three rabbits had been subjected to experiment. One of them had received injections of plain serum, the second one injections of antitoxin, and the third one had received no treatment, and had been simply kept as a control. The kidneys from these animals had been then sent for examintion to a pathologist of high repute, who, without any knowledge of the particular animals from which the kidneys had been taken, reported that the least changes were found in the kidneys from the rabbit that had received the antitoxin, and the greatest changes in the kidneys of the control-animal. About the same changes were produced by the serum and by the antitoxin in these rabbits.

So much for the part played by the serum alone. To determine the effect of the antitoxin on the kidneys, Dr. William Vissman injected it into a number of healthy rabbits, using an equal number of control-animals. The kidneys from the animals killed 24 hours after the injections were very firm and of a dark-red color. On the cut surface the cortical substance was very much injected, slightly opaque, and a little more prominent than the medullary substance, which was pale. On microscopic examination of fresh sections in 0.6 per cent. salt-solution, the Malpighian bodies and capillaries of the cortex were found to be distended with blood. The epithelial cells of the tubules were filled with refractive granules, obscuring the nuclei, which were only brought into view by the addition of dilute acetic acid. There were no casts found in the tubules. These conditions were present in all of the animals, and, as the time after the administration of the antitoxin increased, the injection of the blood-vessels decreased, and the cloudy swelling became more prominent. Those animals that had received more than one dose of the antitoxin exhibited slight hemorrhages into the tubules.

From these facts Dr. Vissman argues that since the doses administered to the rabbits were about equal to, or a trifle less proportionately than, the doses administered to children in cases of diphtheria, it is reasonable to suppose that approximately the same changes are produced in children when the antitoxin is administered. He also calls attention to a fact, observed and commented upon by Behring, Roux, Biggs, and others, to the effect that the antitoxin has a certain antidotal action when administered with, or very shortly before, the toxin, but that after the toxin has once begun to influence the organism the antitoxin has but little power to neutralize its ill effects. The conclusion that Vissman draws is that as little benefit is to be expected from the antitoxin after the diphtheria has made such progress that it can be diagnosticated, and that since the experiments just quoted indicate that the antitoxin exerts a deleterious influence, and even reduces the power of the organism to resist the inroads of the disease, it is highly probable that, instead of reducing the mortality of diphtheria, the antitoxin has really increased the death-rate.

In a paper on "The Physiological Action of Serum-injections," Dr. William Henry Porter states that as the serum produces a rapid destruction of the blood-cells, and these cannot pass through the body without change or oxidation, it is probable that the chemic properties of the living cells are largely overtaxed. He objects particularly to serum-therapy because all serums and toxins are absolutely unknown quantities. In his opinion, if the statistics of this subject were properly studied, it would be found that the mortality from diphtheria has been raised rather than lowered by the antitoxin-treatment.

But positive and candid as are the foregoing statements, they only seem to excite renewed discussion and controversy. Dr. William H. Park

says that if moderate quantities of serum be injected into animals there will be a moderate reduction in the number of the red blood-cells, but that there will be no broken-down cells, and that after a week or two the original number of red blood-cells will be restored. There is no change in the number of the leukocytes produced by plain serum, but the injection of serum and the antitoxin causes a temporary reduction in the number of the leukocytes. The same changes in the red blood-cells have been noticed in the 800 or more children in New York City who have been treated with the immunizing serum. These children had a slight rise of temperature and a transitory and moderate albuminuria. They have been carefully watched, and in not a single instance has there been any permanent ill effect from the treatment. In drawing deductions from experiments on animals, it should be remembered that the kidneys of rabbits often show granular and fatty changes independently of any experimentation; indeed, Dr. James Ewing says that in an extensive experience in experimentation on rabbits he has found it very difficult to secure rabbits with normal livers, spleens, and kidneys. This observer, having noticed a marked reduction in the number of leukocytes in 55 cases treated with the diphtheria-antitoxin, endeavored to determine whether this was due to the blood-serum or to the antitoxin. He found that when rabbits were injected with normal sheep's serum there was no appreciable decrease in the number of the leukocytes, but that the injection of the antitoxic serum was followed by a decided diminution in their number.

Finally, we may refer to the researches of Dr. J. S. Billings, Jr., at the laboratory of the New York Board of Health. Out of 33 cases of diphtheria treated with the antitoxic serum, a reduction in the number of red blood-cells was noticed in only nine cases, and in but three of these was this diminution at all marked. In a few cases of diphtheria received at the hospital in the latter stages of the disease, the number of the red blood-cells actually increased under the antitoxin-treatment. Five control-cases were treated outside of the hospital without the antitoxin, and in these a decided decrease in the number of the red blood-cells was observed.

We have cited the foregoing array of evidence in order that due weighing may be given it. There can be no doubt, however, that the trend of scientific opinion among those best fitted to judge is that the treatment of diphtheria with the antitoxin has tremendously lessened the average rate of mortality. Despite all adverse facts and criticism, that seems beyond dispute. We may have to modify the details of treatment, and we may at last indeed find that it is "not a specific" or "cure-all," but the fundamental principle is not likely to be overthrown.

EDITORIAL COMMENTS.

More about Antivenene.—This is an age of "Anti's," from Behring's latest discovery back to the respectable "cullud lady" who held "Mas'r Gawge Washington" in her arms, as a tiny girl. The newspaper-"doctors" have taken it up these several years past and we have "Anti-fat," "Anti-korns," and a legion of others. The impulse has now spread into the social and moral realms with deplorable results, and we read of "anti-vaccination" and "anti-vivisection" movements with—unintentionally—comic (or more correctly ridiculous) journals as their champions and mouthpieces.

Antivenene, was described some months ago in the editorial columns of THE NEWS, in connection with Prof. Fraser's discoveries, but a further series of experiments has been continued by Dr. Calmette, pathologist to the French Military Hospital at Saigon, Cochinchina, with some very interesting results which have just been published. The doctor has reached, independently, almost the same conclusions as Prof. Fraser and has further investigated the question of the nature of the immunity produced. He has found that the serum of certain animals naturally possesses a distinct immunizing power against the snake-venom and in occasional individuals of these species this rises to a positive antitoxic power. That this immunity could be readily acquired by certain animals has been known for some time. One such instance is known to us: A bull-terrier in Western Nebraska that was addicted to the pastime of killing rattlesnakes displayed severe toxic symptoms the first time he was bitten, a less violent result the second and third times, and finally no apparent effect from his encounters. From Australia has just been reported a similar series of reactions on the part of a dog, to the poison-spur of the Duck-mole (*Ornithorhynchus*). The immunity, however, popularly supposed to be possessed by the mongoose and the hog was found by Dr. Calmette to be due mainly to the quickness and agility of the former and the thick hide and knife-like hoofs of the latter, although both their serums were highly antagonistic to the action of the venom. In the light of these results it would almost seem as if the widespread popular custom of using "snake-bite" remedies containing the gall-bladder, the flesh, or even the dried venom of the snake had had possibly some crude sort of a rational basis, however slender.

Extending his experiments, Calmette ound that subjects immunized against hydrophobia, tetanus, and abrin (calabar-bean) displayed a high degree of immunity to the venom, and in some cases their serum developed marked antitoxic properties in the same direction. More than this, rabbits that had been inoculated against abrin acquired a high degree of resistance, amounting,

in some cases, to immunity against, not only venom, but also diphtheria, ricin, and even anthrax as well. Another series of experiments showed that in certain cases *the normal serum* of *man* is distinctly antitoxic against diphtheria, as was already known in the case of the horse.

These results form an intensely interesting and suggestive group, and taken altogether would seem to justify the belief that immunity mainly consists in the raising to a high pitch of the *general* resisting-power of the normal serum. If this be the case, may we not hope either that some antitoxin will ultimately be found that will have a protective effect against a whole class of diseases, or that we may discover how to develop this normal immunity, which many of us unquestionably possess already (else the race were long ago extinct), by hygienic means?

"Uranalysis" and "Symphyseotomy" Again.—When a badly formed word has once gained vogue, is once actually in current use, there is little use in trying to kill it. There are thousands of such words already in the language that are either laughable or disgusting, or both, according to the standpoint taken. But there they are, and all tilts against them are quixotic. Habit is fate. *Quieta non movere* is a maxim that holds in philosophy as in politics.

But when in cold blood it comes to adding new atrocities, and backing them up with lexicographic or other erudite authority, then, indeed, objection may be interposed. A distinguished physician for whose scientific attainments—other than philologic—we have the most genuine respect, proposed the term *uranalysis* instead of the elder barbarism *urinalysis*. In criticising this "neoplasm" (which as Dr. Parvin would say is an anagram for "pleonasm") we found a most distinguished lexicographic authority arrayed against us, and in favor of *uranalysis*. It seemed to us that the etymologic savagery of *uranalysis* should be glaring without either erudition or pointing out. Not so, however. It came to be a question of authority. In writing to Dr. W. W. Skeat, of Cambridge, England, the undisputed master of English etymology, the author of the great etymologic dictionary, we incidentally mentioned the coinage of the word *uranalysis* and asked him what he thought of it. His characteristic reply was: "I need not say that *uranalysis* means 'analysis or ure;' whatever 'ure' means I do not know."

In the same letter we also asked Mr. Skeat concerning the long-disputed correctness of the spelling of *symphysiotomy*. We have always contended that new words are formed from the *stems* or *roots* of words in older languages. The advocates of *symphyseotomy* based their preference upon the supposition that the word was formed from the Greek genitive, according to the meaning, "the cutting *of* the symphysis." This rule is a manifest error, and besides would require changes in thousands of English words. The φύσις in symphysiotomy, *e. g.*, is the same φύσις whence are derived our words *physiology*, *physiognomy*, *etc.*, *etc.* *Physiology* is the science (λόγος) of the body (φύσις), and if made up from the genitive should be spelled *physeology;* the same holds of *physiognomy*, etc. In reference to this point we also quote Skeat's conclusive words from his private letter: "It is not the case that Greek compounds are formed from genitives. They are formed from stems. Every Greek scholar knows all about it; it is not a question of 'opinion' at all, but of simple *facts*."

And yet, however much we may hope, we still doubt if we have seen the last of these morbid new-growths.

Sterilization in Excelsis.—It has long been a standing joke among bacteriologists that the day would come when the strictest surgical asepsis would be carried out at our dining-tables as well as in our operating-rooms; according to *Truth* (London) the day has already arrived. Pasteur, we are assured, was such a consistent germ-worshipper (or iconoclast?) in every realm, that for the latter years of his life he insisted upon a rigorous process of sterilization of everything that came upon his table. His napkin was taken directly out of a hot-air chamber and brought to him "white-hot." All his bread was either rebaked or toasted for each meal and brought to the table before it had time to cool in a sterilized napkin. His knives, forks, spoons, and plates were freshly scalded just before using, and his dessert-fruit washed in water that had been boiled and then hermetically corked for use. "An antiseptic liqueur ended the repast." We have all used such liqueurs just in that way and enjoyed them without any idea that we were taking a scientific precaution, but now we have a reason for the faith that is in us. We have grave doubts, however, whether the other precautions will ever come into very general use. In this connection the story is related of the distinguished savant that on one occasion, after carefully rinsing in a glass some grapes he was about to partake of, he abstractedly swallowed down the wash-water, dregs and all.

CORRESPONDENCE.

CEPHALHEMATOMA.

To the Editor of THE MEDICAL NEWS,

SIR: I have read with interest the report of a case of "Cephalhematoma with Cerebral Hemorrhage," by Dr. T. W. Keown, in the October 26th issue of the NEWS.

The writer refers to the text-books as regarding "cephalhematoma in infants as due to prolonged labor and mechanical injuries resulting therefrom," describing this form of hemorrhage as "*a particular form of caput succedaneum.*" In all of the text-books I have been able to consult, I have failed to find caput succedaneum and cephalhematoma described as the same condition, or one "a particular form" of the other.

Dunglison says of the former, "A term used for the tumefied *scalp* which first presents in certain cases of labor;" and of cephalhematoma, "a sanguineous tumor sometimes developed between the pericranium and bones of the head of newborn children."

Ashby says a "cephalhematoma is distinct from a caput succedaneum, inasmuch as the latter does not fluctuate, disappears in a day or two, and extends beyond the limit of the parietal bone."

In speaking of caput succedaneum, Cazeaux and Tarnier say: "This tumor, when large, is the result of a slow and painful labor; it is always single; and may be distinguished from the cephalhematoma, with which

it has long been confounded, by the following characters: the caput is irregularly circumscribed, whilst the limits of the cephalhematoma are very distinct; in the former, the hairy scalp is of a well-marked violet color; the tumefaction has an edematous consistence, retaining the impression of the finger, and is not fluctuating, whilst the skin of the latter is colorless, presenting a well-marked fluctuation, occasionally even some pulsations, and its base is limited by a prominent osseous border."

So much for the distinct entity of the two conditions. Now as to the cephalhematomata being due to "prolonged labor and mechanical injuries resulting therefrom," it is a fact that more often than not this condition is noted in children born after perfectly easy, normal, and non-instrumental labors.

The following is a record of four cases of cephalhematoma occurring in 202 cases of childbirth under my observation, of which I have a record:

CASE I was that of a male child, the mother a secundipara. The first stage of labor lasted 3 hours, the second stage 10 minutes. No instruments were used. The position of the child was R. O. A.; the caput succedaneum was very slight and to the left posteriorly. Double cephalhematomata were noted on the second day, over the parietal bones, the left, the larger, measuring 6 x 3 cm.

CASE II.—The woman was a primipara, the child a male. The labor in the first stage lasted 14 hours; in the second stage 1½ hours, aided by the forceps. The caput succedaneum was thick and directly posterior. The position of the child was L. O. A. Double cephalhematomata were noted on seventh day.

CASE III.—The woman was a primipara, the labor in the first stage lasting 6 hours and 45 minutes, in the second stage 37 minutes. The position was L. O. A. The child was a male with the caput thick and directly posterior. A cephalhematoma was situated over the right parietal bone; the time of its appearance was not noted.

CASE IV.—The woman was a sextipara. The labor in the first stage lasted 8 hours, in the second stage 10 minutes; the position was L. O. A. The child was a female with no caput. A cephalhematoma existed over the right parietal bone, and was noted on the third day.

Of these cases, but one could have been considered born after a tedious or instrumental labor.

Semmelweiss[1] is said to have seen a cephalhematoma in a child delivered by Cesarean section.

Ashby divides cephalhematomata into two varieties: 1. A subaponeurotic, or a hemorrhage occurring under the occipitofrontalis aponeurosis and the periosteum; and 2. The subperiosteal.

The case related by Dr. Keown was most likely of both these varieties; had it been a caput succedaneum the tumor would have been found to be jelly-like in consistency, with a few minute hemorrhages scattered through it.

I have thus gone into detail on this subject, because I think the two terms are too often confounded, and a clear idea should be had in regard to the differences between them.

Very truly yours,

HENRY E. TULEY.

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[1] American Text-book of Diseases of Children.

NEWS ITEMS.

The Association of Assistant Physicians of Hospitals for the Insane held its second meeting at the Michigan Asylum for the Insane, Kalamazoo, Mich., October 24, 1895. The membership, originally composed of medical officers of the staffs of asylums in Michigan, Illinois, and Iowa, was extended to include the assistant superintendents and assistant physicians of all asylums. The next meeting will be held at the asylum at Independence, Iowa, during May, 1896.

Perforation of the Rectum and Peritoneum.—Dr. Weller Van Hook, 103 State Street, Chicago, will be grateful for reports of cases of perforation of rectum and peritoneum by impalement, to furnish the basis of a collective investigation. An interesting case of this kind was reported in THE NEWS of October 12, 1895.

A Course of Five Lectures on Bacteriology is being delivered by Dr. M. V. Ball, at the Academy of Natural Sciences, Nineteenth and Race Streets, Philadelphia, on Saturdays at 3 P.M. The course began on November 16th and will continue to December 14th, inclusive. There is no charge for attendance.

Pediatrics is the name of a new semimonthly publication to be devoted to the diseases of children. It is owned by Dr. Dillon Brown, of New York, and edited by Dr. George A. Carpenter, of London.

Professor Johannes Gad, of Berlin, has been elected the successor of the late Professor Hering in the Chair of Physiology in the University of Prague and in the directorship of the Physiologic Institute.

Dr. James K. Young has been elected Professor of Orthopedic Surgery in the Philadelphia Polyclinic, and also Clinical Professor of Orthopedic Surgery in the Woman's Medical College.

Dr. Friedrich Miescher, a well-known and able physiologist, and at one time professor of physiology in Basle, died of pulmonary tuberculosis on August 26th, at the age of 51 years.

Dr. H. C. Boenning has been elected Professor of Anatomy and Surgery in the Philadelphia Dental College, in succession to the late Dr. Garrettson.

Two Football Deaths are reported in the daily papers, George Butterworth, of Rochdale, Scotland, and Samuel Steelfox, of Shamokin, Pa.

Dr. Joseph W. Brockbank, of Nicetown, Philadelphia, died of pneumonia on November 7th, at the age of 33 years.

Dr. Robert Battey, the distinguished gynecologist, died at Rome, Ga., on November 8th, at the age of 67 years.

The Texas Sanitarian begins its fifth volume as the *Texas Medical News*.